SEPTEMBER 15, 1945

Railway Age

Founded in 1856

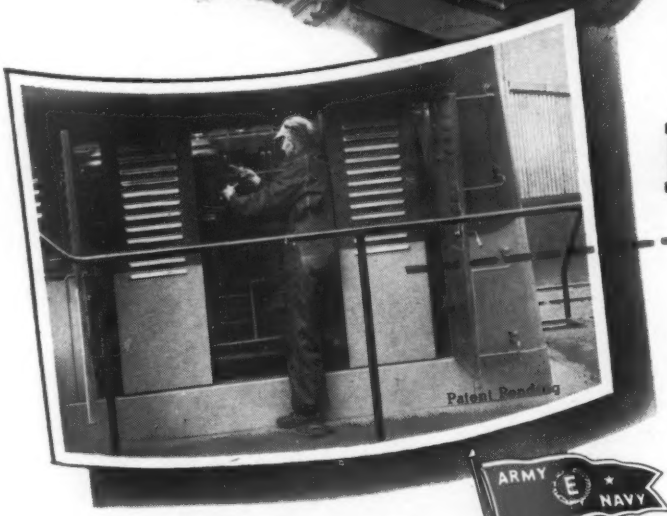
THE LIBRARY OF CONGRESS

GREATER *All-weather* SAFETY FOR THE TRAINMAN

"SAFE GRIP" LADDERS AND HANDHOLDS

PORTER DIESEL ELECTRIC

{80 TON SWITCHER}



Another Important Porter Development!

A brand new idea in hood construction and door arrangement provides easy access to engines through full double-door openings. The frameless hood is constructed entirely of formed sheets, thus eliminating angles and stanchions, and affording unobstructed access to power plants. Service men can work on one of the two independent power units while the locomotive is operating on the other, thus adding to its availability. Full description on request.

ARMY E NAVY

PORTER "Better Built" Equipment
Established 1866

LOCOMOTIVE DIVISION: Diesel, Diesel-Electric, Electric, Steam, and Fireless Steam Locomotives.
PROCESS EQUIPMENT DIVISION: Agitators, Mixers, Blenders, Autoclaves Kettles, Pressure Vessels, Driers, Ball and Pebble Mills.
QUIMBY PUMP DIVISION: Screw, Rotex, Centrifugal, Chemical Pumps.
ORDNANCE DIVISION: Projectiles, Heavy Forgings, Breech Blocks.

H. K. PORTER COMPANY, Inc.
PITTSBURGH, PENNSYLVANIA
FACTORIES:
PITTSBURGH, PA. — NEWARK, N. J.
BLAIRSVILLE, PA. — NEW BRUNSWICK, N. J.

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 119, No. 11.

There's a lot being said these days about the role of low-alloy, high-strength steels in the industrial picture. Designers of automotive and railway equipment, especially, are thinking in terms of these versatile steels, and when they think of such steels, they think of Bethlehem's Mayari R.

Let Mayari R make your postwar product lighter . . . stronger . . . longer-lasting. You can specify Mayari R with confidence, for it has been long and thoroughly tested, and has given a good account of itself, both in the uses of peacetime, and in the grimmer arts of war.

Among the many things about Mayari R which have made friends for it, from the front office to the shop, there's one that's especially worth emphasizing. Where Mayari R is used with weight-saving in mind, in many cases its additional cost is quickly repaid in extra advantages—in ease of fabrication, in increased pay-load, in greater stamina and resistance to atmospheric corrosion.

Herewith, at right, are briefly given the chief points about Mayari R. For fuller information, write for the illustrated Mayari R catalog. Address the nearest Bethlehem district office, or Bethlehem Steel Company, Bethlehem, Pa. No obligation, of course.

Mayari R
advantages at a glance

Yield point: 50,000 p.s.i.—almost double that of mild carbon steel.

Corrosion resistance: five to six times that of mild carbon steel; two to four times that of copper-bearing steel.

Strength plus corrosion resistance making possible weight savings up to 40 per cent.

Remarkable resistance to impact even at sub-zero temperatures.

Highly ductile, easily fabricated under regular shop practices.

Readily welded by usual methods. Non air-hardening. No heat treatment needed.

★ BETHLEHEM STEEL ★

**Rhymes with "fiery." The "R" indicates "Rust Resisting."*

Mayari R *makes it lighter... stronger... longer lasting*

U·S·S COR-TEN Celebrates

A FAMOUS "FIRST"—*the beginning of a new era in freight car construction.* This hopper car built by the Baltimore & Ohio Railroad Company is the first freight car built light with U·S·S COR-TEN. 12,186 lb. lighter than conventional heavy construction with A.A.R. structural car steel. Its load limit is 137,800 lb. and the lightweight is 31,200 lb., making the ratio of revenue load to gross load 81½%; the ratio of revenue load to lightweight, 4.42.

THEY CALLED THEM "TIN CANS" *in 1935 but they're still on the job hauling 5 extra tons of ore and limestone every trip.* "They'll fold up like an accordion the first time they go through the dumper" was a favorite comment of hard-boiled railroad men when 100 hopper cars like this weighing only 30,500 lb. were first put into service. Many expressed the opinion that they would not last more than a year.

That was ten years ago. Since then these U·S·S COR-TEN cars, the lightest hoppers ever built, have made an average of 274 trips. Not one of them has yet been given a general overhaul. Such service proves the stamina of U·S·S COR-TEN.

UNITED STATES STEEL

10 Years of Progress

1935-1945

TEN YEARS AGO
LIGHTWEIGHT FREIGHT CAR CONSTRUCTION WAS PIONEERED BY U·S·S COR-TEN

HAILED as "the most important step forward in freight car modernization," the reduction of excess weight started with the advent of U·S·S COR-TEN in 1935.

Since that time, lightweight construction with U·S·S COR-TEN has reduced weight in 53,042 freight cars an average of 2.65 tons per car. It has made available to the railroads a grand total of 140,561 *bonus* tons of carrying capacity—equivalent to 2810 *extra* 50-ton freight cars, enough to make up 53 complete trains . . . from which the revenue is all clear profit!

No other material can even approach U·S·S COR-TEN's record in reducing the weight of freight equipment—so economically, so safely and with such consistently good results.

This lightweight U·S·S COR-TEN equipment has stood the tough test of wartime operation. These cars are still in service. All of them have carried heavy loads, made high mileage, have effected operating economies that are impossible with conventional equipment.

As a first-hand measure of their performance, may we paraphrase a famous slogan, and suggest that you "ask the roads that own them."

EVERY SUNDAY EVENING, United States Steel presents *The Theatre Guild on the Air.* American Broadcasting Company coast-to-coast network. Consult your newspaper for time and station.

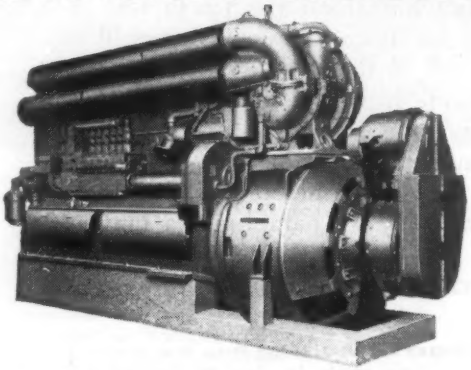
AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*
United States Steel Supply Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

TODAY **U·S·S COR-TEN** —the premier low-alloy, high-strength steel—is again available to build your new equipment light, without loss of stamina, and at little if any increase in cost. Our engineers will gladly give you the benefit of their unequalled experience in applying it most economically to your designs.

USS HIGH STRENGTH STEEL UNITED STATES STEEL

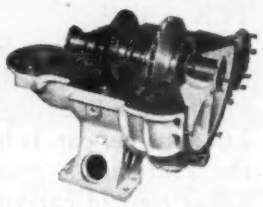
66% MAINTENANCE

ALCO-G.E.'s EXCLUSIVE DESIGN FEATURES PRODUCE



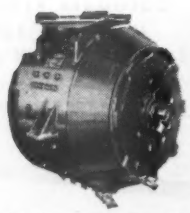
4-CYCLE DIESEL ENGINE—Working parts are strengthened by putting into them weight necessary for adhesion.

1. Four-cycle design minimizes piston-pin wear and replacement because the reversal of load allows both sides of the pin to be lubricated.
2. There is no concentration of heat in the valve parts to shorten their life or require special cooling facilities. The three idle strokes after each combustion stroke allow ample time for cooling.
3. An automatic overspeed safety device prevents engine speeds of more than 15 per cent above the engine's top speed rating.
4. Engine and generator are built as a single unit to prevent misalignment.
5. The symmetrical cylinder liners have no ports, and they fit the straight, smooth bore accurately.



TURBO-CHARGER—boosts engine's power output 50% by harnessing energy in waste exhaust gas.

1. Requires no mechanical or electric drive. Only connection between engine and supercharger are exhaust-gas and fresh-air manifolds.
2. Has only one moving part which requires no servicing or adjustment.
3. Operates automatically at all loads. Speed, pressure, and quantity of air vary with engine load changes.
4. Pulsating exhaust pressure thoroughly scavenges burnt gases from cylinder, producing cooler engine parts.
5. Operates only when required—"floats on the line" the rest of the time.



DIRECT-CONNECTED GENERATOR—makes engine's entire horsepower output available for traction, at all speeds.

1. Armature is a solid structure built to withstand the high speed and lateral and torsional vibrations of the engine.
2. Armature is dynamically balanced before and after winding.
3. A single, self-aligning bearing supports the commutator end of the armature and provides sufficient clearance for armature end play.
4. Separate main-field excitation, which maintains constant generator output at locomotive speeds, is supplied by a split-pole exciter.
5. Exceptionally large inspection holes make the commutator and brush rigging readily accessible.

Alco GE AMERICAN LOCOMOTIVE

CE

DUCE

VE

AILWAY AGE

SAVINGS--

proved by the 190,000-hour maintenance record of 21 Alco-G.E. units on 9 railroads

Railroad	Number of locomotives	Hours operated	Maintenance cost
A	8	82,161	$30,988
B	1	16,178	7,068
C	1	7,095	1,686
D	3	23,171	2,486
E	1	2,354	831
F	1	255	110
G	2	31,884	7,425
H	2	7,740	4,476
I	2	20,452	7,363
	21	191,290	$62,433

Average maintenance cost per locomotive-hour (diesel-electrics) ..... 33¢
Average maintenance cost per locomotive-hour (steamers) ..... 97¢
DIESEL-ELECTRIC SAVINGS 66%

EXTRA STURDINESS . . .

CONSTANT-OUTPUT TRACTION MOTORS—insure smooth, fast acceleration at all engine speeds.

1. Exceptionally rigid armatures reduce wear on gears and pinions.
2. High torque characteristic and large thermal capacity absorb the overloads encountered in switching.
3. Specially designed relay automatically transfers motor connections from series to series-parallel, thereby providing smooth, fast acceleration at both full and partial power.
4. Milled and gasketed gear-case joints permit the use of low-viscosity oil, which lubricates gears most effectively and thereby produce longer gear life.
5. Automatic wheel-slip relay cuts off power from motors until slipping stops, then resumes power output.

INTERCHANGEABLE AND REVERSIBLE TRUCKS—are simple in design, and they equalize flange wear.

1. Sturdy, one-piece, cast-steel frames meet railroad requirements of simplicity and easy maintenance.
2. Combination semi-elliptical and coil springs thoroughly cushion roadbed shocks and insure smooth riding.
3. Wheel hub liners are made unnecessary by the use of an axle and thrust bearing which is easily inspected and maintained through the journal box lid.
4. Bearings, collars, wedges, and covers are built into the side frame members. This eliminates the need for a moving pedestal box and avoids the maintenance of pedestal clearances.

OPERATING records of 21 Alco-G.E. diesel-electric locomotives on nine railroads show that their average maintenance cost is 66 per cent less than that of steamers doing comparable work.

One eastern railroad, for example, has been operating eight Alco-G.E. 1000-hp units in both freight and passenger service since 1941. A comparison of their maintenance cost with that of steamers doing similar work showed that the diesel-electrics cost 17 cents less per mile in passenger service and 20 cents less per mile in freight service. Total maintenance savings amount to more than $140,000 a year—20 per cent of the cost of the eight locomotives.

Savings like these are typical and can be generally expected when Alco-G.E. diesel-electrics replace steamers. The reasons why the savings are so high can be found in the experience-proved design and construction of each component and the care taken in matching the operating characteristics of each component to the others. G.E.'s electric drive, alone, has benefited from more than 50 years of steady improvement, and from experience with railroad operating conditions.

If you are considering what economies can be made in your operations through the use of diesel-electrics, we recommend starting with a motive-power study. Our engineers would like to collaborate with your organization to give you the benefit of our varied experience. We build and recommend all three types of motive power —diesel-electric, electric, and steam—each for the service in which it is economically best fitted.

ETS-145-9560

and GENERAL ELECTRIC

It was LUXURY then—but now they

POSTWAR PASSENGERS WILL PATRONIZE CARRIERS THAT OFFER THE MAXIMUM COMFORT, SERVICE, SPEED AND SAFETY.

Modernize with Westinghouse

expect COMPLETE MODERNIZATION

. . . modernization made possible by the Axle Generator

Over 50% of the railroad passenger cars now in use are over 25 years old. Many of these cars will be replaced or completely modernized . . . to meet tomorrow's requirements for new travel comfort and convenience. Passengers will expect new designs, new furnishings, up-to-date electrical equipment.

For this reason, postwar plans must include modernization features such as . . . air conditioning . . . electric water coolers . . . improved lighting . . . air cleaners . . . improved power supply . . . and other engineering improvements.

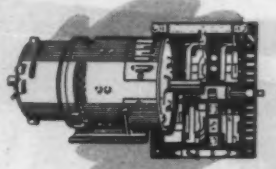
These modernization features require large generators . . . with increased margin of capacity. Westinghouse has developed the Axle Generator that can adequately carry these increased loads. Investigate the numerous advantages of the Westinghouse Axle Generators. Ask your Westinghouse office for a copy of "Development of Electrical Equipment for Standard Railroad Passenger Cars". J-95101

WESTINGHOUSE AXLE GENERATOR

Axle Generator and auxiliary motor are built in a single unit—constructed for mounting on the car body—adapted for driving from the car axle. Self-ventilated rolled steel frame includes removable covers and baffled openings for protection. Rating is 20 kw, 76 volts, 1500 rpm, and weight is 1315 pounds. Included are antifriction bearings. Class B insulation is used on armature and all field windings. In yards and during long station stops the stand-by a-c motor may be plugged into wayside power supply facilities to drive generator and maintain electrical service in the car. For details of the Westinghouse Axle Generator ask for "Control Equipment for YXG-1-A Axle Generator Specification".

Consult Westinghouse on your plans for passenger car modernization. Available are axle-driven generators and control for high-speed operation; compressor motor and control for air conditioning; fluorescent lighting equipment; Precipitron for electrostatic air cleaning of cars; water coolers; "De-ion" circuit breakers; and other equipment for efficient car operation. Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pa.

Air Conditioning . . . with Westinghouse Compressor Motor and Control

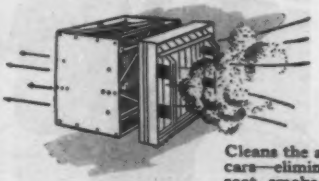


Strong, lightweight, compact construction of motor and control, assure dependable service.

Westinghouse Water Coolers

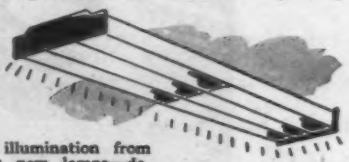
Electric water coolers of ample capacity—"tailor-made" for railway service.

Air Cleaning . . . with Precipitron



Cleans the air in passenger cars—eliminates 90% of soot, smoke, dirt—permits smoking in every car.

Westinghouse Fluorescent Lighting



Better illumination from efficient new lamps—designed to fit new lighting plans.

"De-ion" Circuit Breakers

Permit maximum loading of circuits—quick resumption of interrupted service — positive protection.

WESTINGHOUSE

RAILROAD ELECTRICAL EQUIPMENT

The Casino Car...

Patent Applied For

● *The Casino Car can be combined with the Junior Club car recently announced by Pullman-Standard, thus providing entertainment for the whole family in the same car.*

HONOR THE VETERAN WHO WEARS THIS BUTTON

Pullman-

CHICAGO • NEW YORK

PRIVATE GAME ROOMS FOR DAYTIME USE

Again *Pullman-Standard* offers an innovation . . . the Casino Car for daytime trips . . . a car with a series of private and luxurious game rooms. By the use of sliding panels, folding chairs and collapsible tables, the rooms can be made adaptable for anything from solitaire to a six-handed card game. For the larger group, a single spacious compartment can be arranged, 14 feet long and 7 feet wide.

The daytime accommodations afforded by the Casino Car should be popular with business men and writers, or groups who want gaiety and recreation.

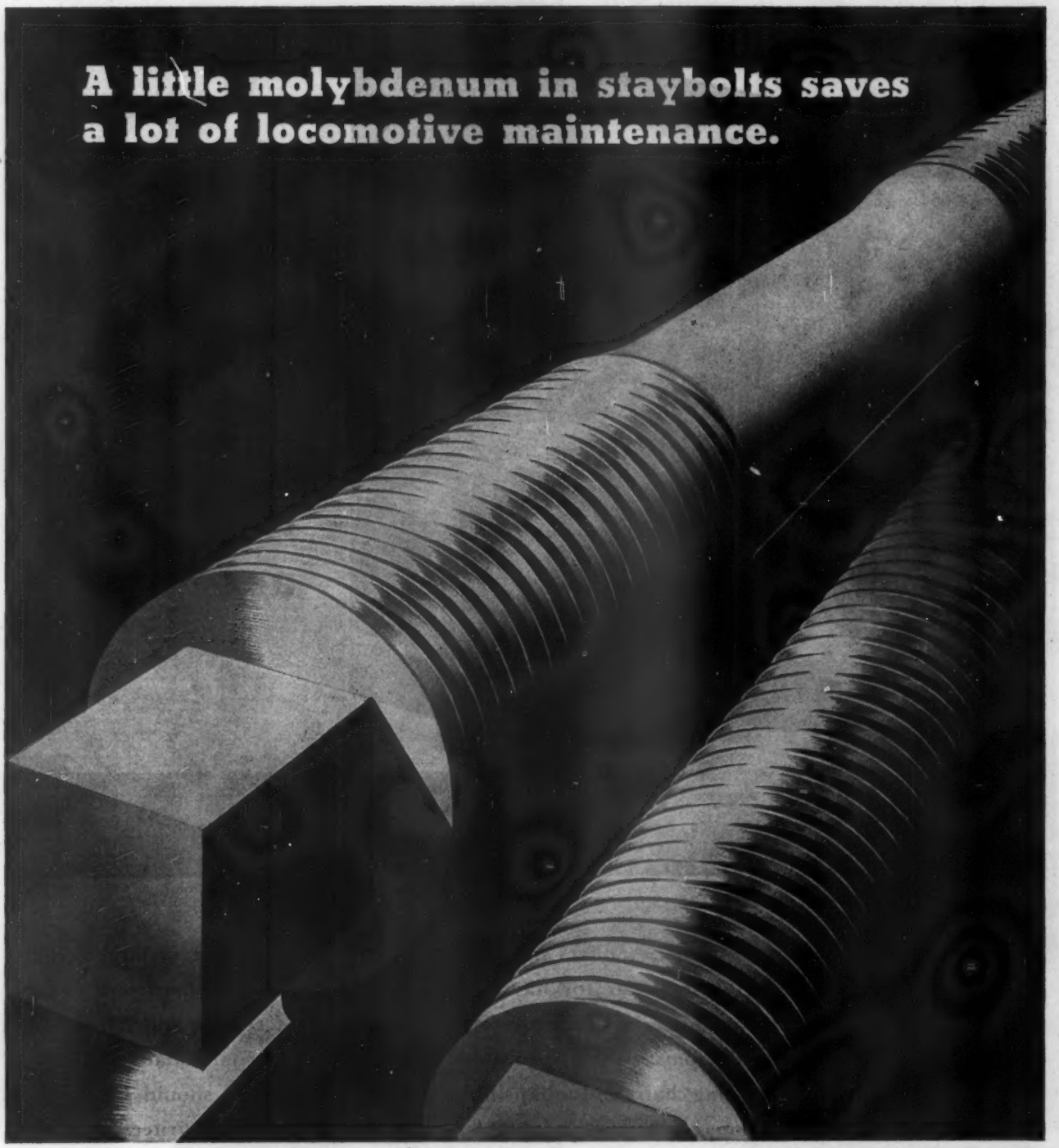
PULLMAN-STANDARD . . . FIRST with the LATEST

Standard CAR MANUFACTURING COMPANY

CLEVELAND • WASHINGTON, D. C. • PITTSBURGH • BALTIMORE • BIRMINGHAM • WORCESTER, MASS.

San Francisco Sales Representative, Mark Noble

A little molybdenum in staybolts saves a lot of locomotive maintenance.



CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS.

ARMY E NAVY

MOLYBDIC OXIDE, BRIQUETTED OR CANNED • FERROMOLYBDENUM • "CALCIUM MOLYBDATE"

Climax Molybdenum Company

500 Fifth Avenue • New York City

MOLY

Magor

DESIGNERS AND MANUFACTURERS

of Freight Cars of All Types Including Air Dump Cars

Magor Freight Cars are consistent revenue producers. Special attention to details in design and skillful workmanship assure carriers of long life dependable freight equipment. Magor facilities are capable of producing all types of freight cars of modern construction. Let us bid on your requirements.

★

MAGOR CAR CORPORATION

50 Church Street
New York 7, N. Y.

You get KNOWN

Recognized Standards

Simplify your Buying Practice

The Fasteners Industry offers you more than 400,000 items you can order by size and name! Standardization and accurate manufacturing methods permit you to buy and re-order parts from several sources if necessary, with full assurance that they will match and fit perfectly.

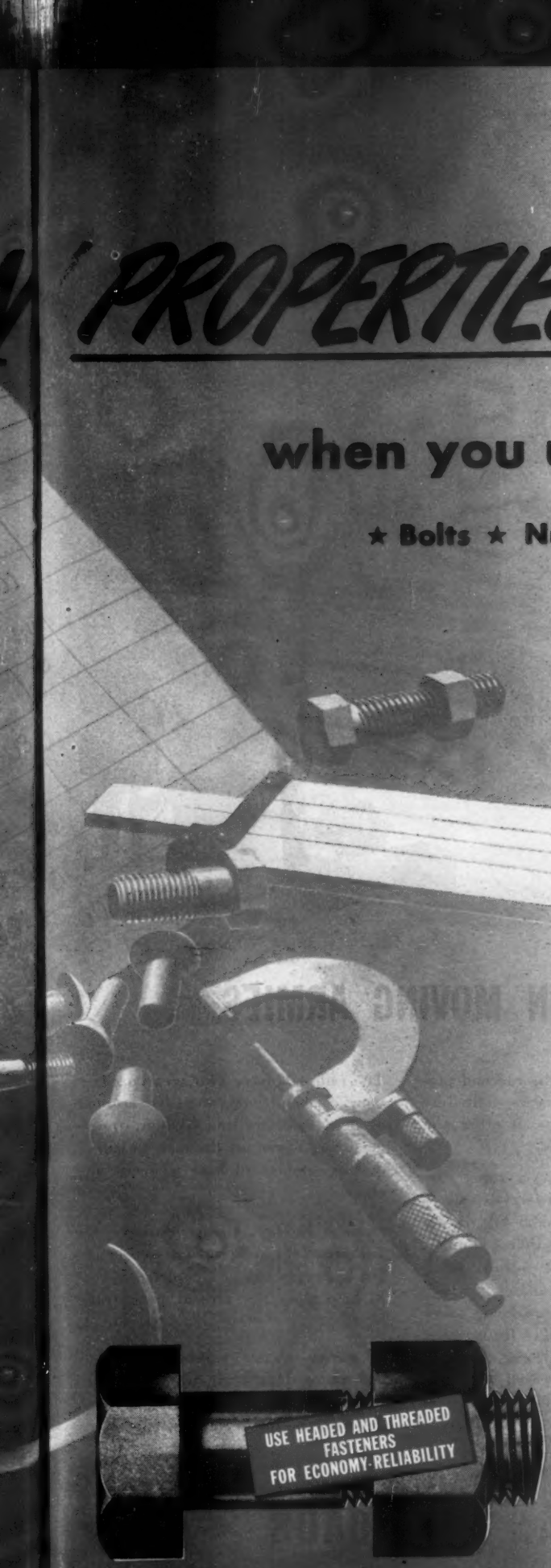
Furthermore, long usage has led to the development of various standardized fasteners for specialized jobs. Thus, through standardization and simplification of product lines, the Fasteners Industry makes your buying problems easier!

This Standards book contains dimensions, thread fits, weights, etc. of standard types and sizes of bolts, nuts, screws and rivets. 169 pages of data. Price $1.00.

PROPERTIES

when you use FASTENERS

★ Bolts ★ Nuts ★ Screws ★ Rivets



The basic engineering data available to you when you design for the use of standard Industrial Fasteners comes from the known properties of the products, and extensive test data on bolted and riveted joints. Sound engineering practice guides you in the correct and efficient use of fasteners.

Improvements in the design and manufacture of Industrial Fasteners have kept pace with the steady progress in metallurgical and production practice, so that today you have modern products and modern data to use in the fabrication of your equipment, machines or structures. And you have complete confidence in the soundness of the result.

Is your name on the list to receive FASTENERS? This free periodical contains useful data on the application of all types of Industrial Fasteners. Send name, title and address.

AMERICAN INSTITUTE OF BOLT, NUT AND RIVET MANUFACTURERS

1550 Hanna Building · Cleveland 15, Ohio

IT'S ALWAYS A STRAIN MOVING ARMIES

FOR nearly four years we were building up our forces in Europe — to do a job. The job was done — and how!

And now, in the short space of 10 months, or less, the millions of men who did the job in Europe are coming home — and along with them, the other millions who did the Pacific job, too. The end of the war does not mean that train travel will be less.

The total train travel this year will be nearly five times what it was before the war.

All this must be done with virtually the same equipment available in 1940, for during the war years the railroad program of buying new cars was halted by the government because of other and more pressing war needs.

This means that now everything that rolls must be pressed into service. Sleeping cars have been taken off regular trains on all runs of less than 450 miles, so that approximately two-thirds of all sleeping cars are now available for troop train service. Coaches are being taken off regular trains. What's left in regular trains must serve not only civilians but a heavy military traffic as well. So travel is difficult for all — civilians as well as soldiers.

The railroads have two great needs — more cars and more men. Government agencies, military and civilian, are cooperating to recruit the men to help in moving the record load which is just ahead.

Since V-E Day, the government has authorized the building of passenger cars but not many can be completed in time to help meet the present peak travel load.

In the meanwhile, railroad equipment and railroad men are working harder than ever before — for the railroads must do the job with what they have.

AMERICAN RAILROADS

o great needs—
en. Government
civilian, are co-
e men to help in
d which is just

government has
of passenger cars
mpleted in time
ent peak travel

road equipment
working harder
r the railroads
what they have.

AILWAY AGE

Attain for Your New Equipment

The ULTIMATE in Riding Comfort

by specifying and installing

TRAVEL COMFORT CUSHIONS*

TRAVEL COMFORT CUSHIONS* are designed and engineered for each specific job they are to perform. Quality of all materials, expert workmanship and vigilant inspection assures durability, uniformity and unexcelled service . . .

TRAVEL COMFORT CUSHIONS*

are therefore

Fully Guaranteed

Benefit FEATURES

- New Comfort for Passengers
- Trouble-Free Maintenance
- A Long-Lived Profit Making Investment

*Trade Mark

McINERNEY SPRING AND WIRE COMPANY

Factories: Grand Rapids, Michigan and Passaic, New Jersey

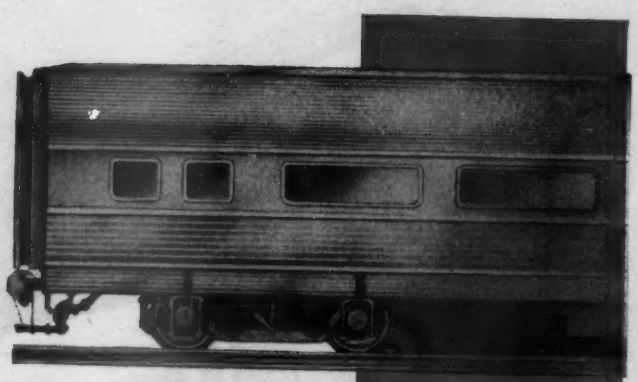
SALES OFFICES: 645 Godfrey Ave., S. W., Telephone 6-1481, GRAND RAPIDS

CHICAGO — 205 W. WACKER DRIVE FRanklin 5780

DETROIT — 911 FISHER BUILDING MAdison 4425

TRAVEL COMFORT CUSHIONS

Ideal for Train or Plane, For Bus or Truck, For Transit Cars or Cabs



BUDD SIDE FRAME ASSEMBLY

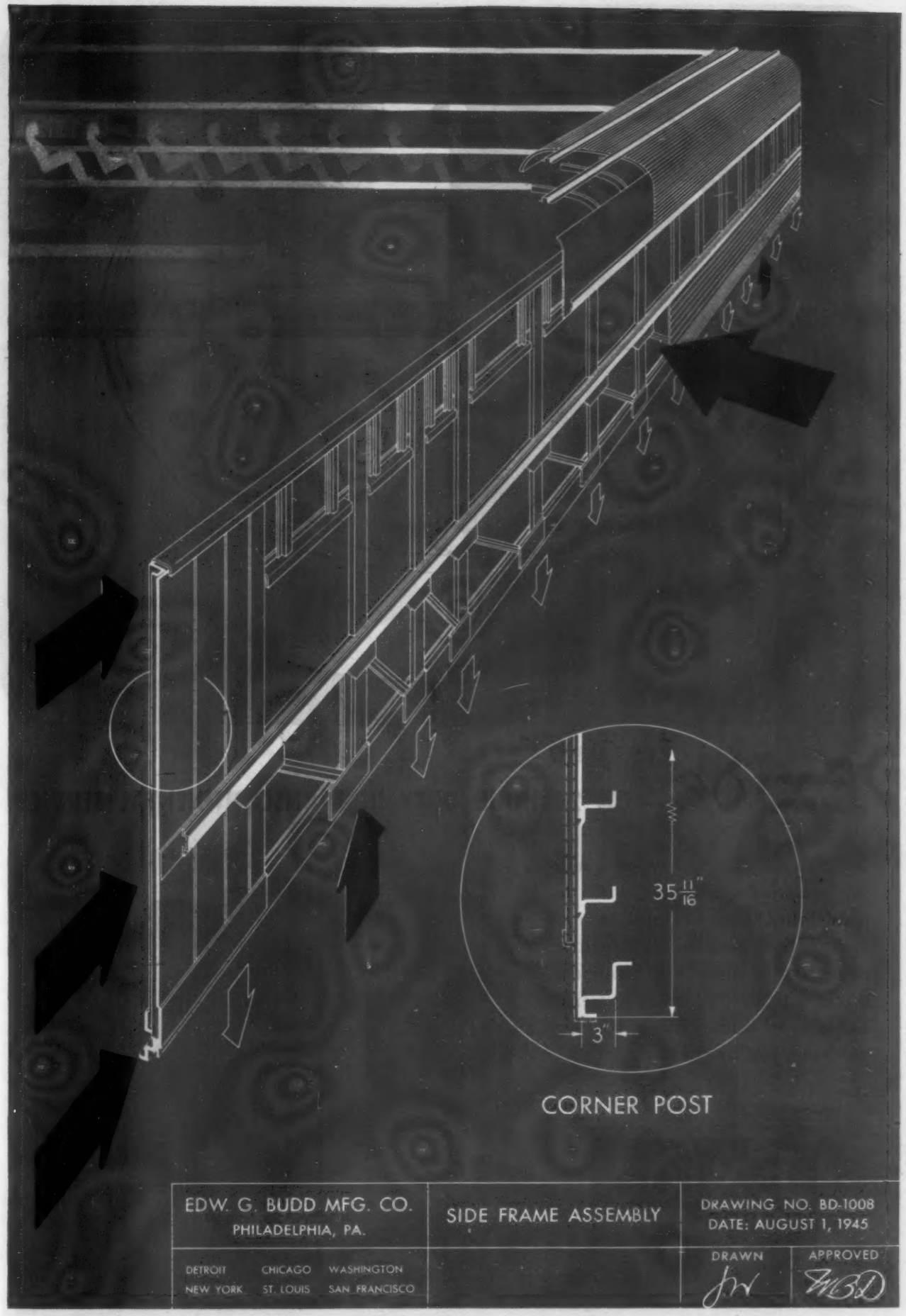
HAS *EXTRA STRENGTH*

The A.A.R. requires a minimum safety factor of 2 for side frame assemblies. Budd has a safety factor of 5. Two and a half times greater than the minimum requirement. And this extra strength of the Budd side frame assembly is an important factor in the overall strength of the entire car.

Built of Stainless Steel and including the belt rail and parts of the side sill and side plate, the Budd side frame enables the entire car to act as a beam in carrying vertical loads. The center sill is free to resist end loads only. And corner posts nearly three feet deep resist corner blows. Windows are wide and spacious without sacrifice of strength. Stainless steel sheathing covers the side frame structure and the fluted panels are removable for maintenance.

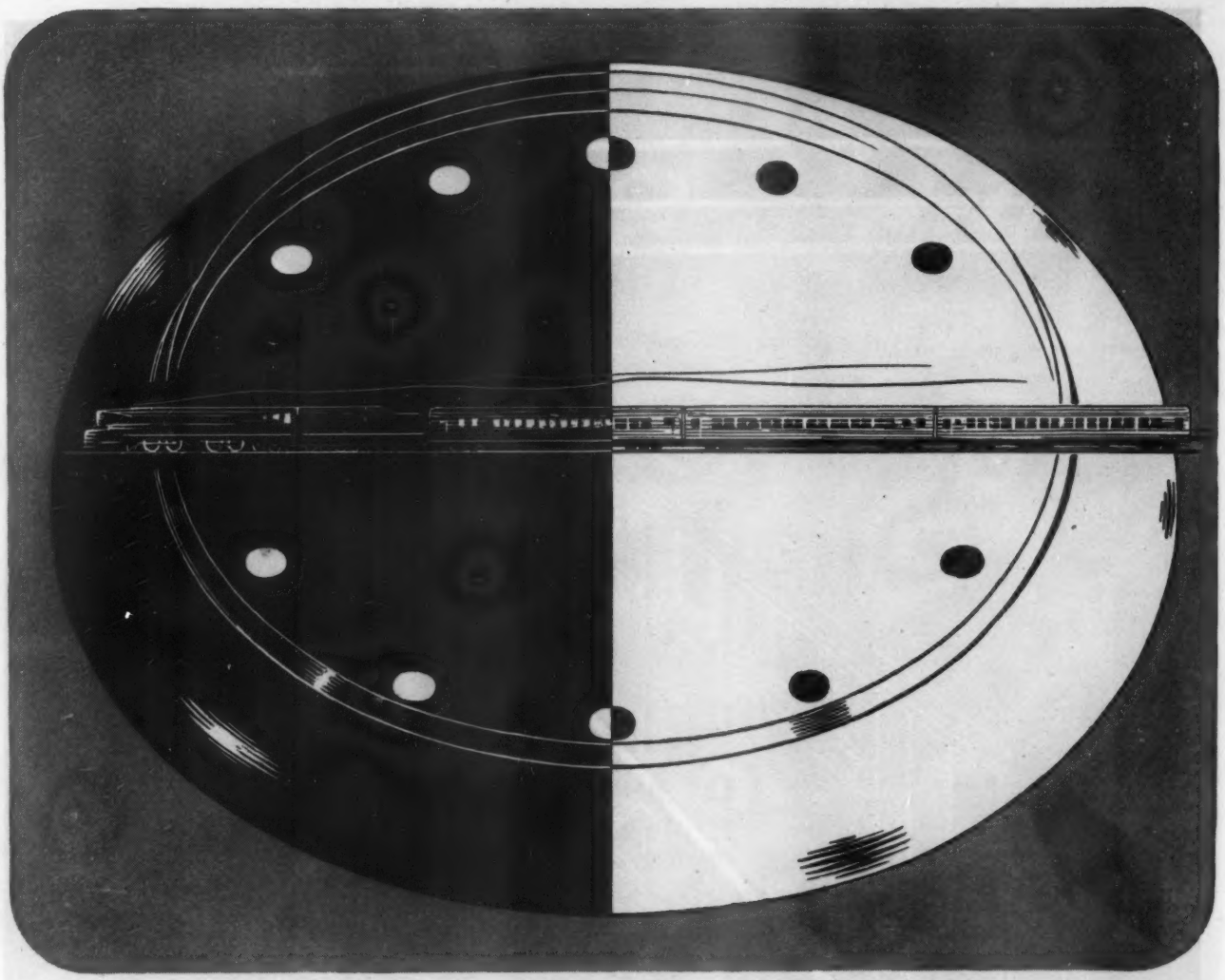
By using advanced methods of construction Budd Stainless Steel cars provide strength and safety that cannot be equaled by railroad cars of the same weight built of any other material suitable for structural use. Edward G. Budd Manufacturing Company, Philadelphia, Pa.

Budd



CORNER POST

EDW. G. BUDD MFG. CO. PHILADELPHIA, PA.	SIDE FRAME ASSEMBLY	DRAWING NO. BD-1008 DATE: AUGUST 1, 1945
DETROIT CHICAGO WASHINGTON NEW YORK ST. LOUIS SAN FRANCISCO		DRAWN JW APPROVED WGD



Exide — ON 24-HOUR DUTY IN TRANSCONTINENTAL SERVICE

SINCE 1891, Exides have been serving America's railroads with dependability, long-life and ease of maintenance. And on the luxurious, new cars planned for tomorrow, there will be the finest batteries Exide ever made. When you buy an Exide, you *Buy* to *Last.*

ARMY E NAVY

Exide BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32

Exide Batteries of Canada, Limited, Toronto

A PERFECT PATTERN FOR PROFIT

MASSACHUSETTS MOHAIR IS

ECONOMICAL

Massachusetts Mohair retains its bright new appearance with a minimum of maintenance. That's why the nation's railroads favor comfortable, long-wearing, eye-catching Massachusetts Mohair fabrics! Behind each yard of Massachusetts Mohair fabric stands a background of 50 years of experience as *specialists* in the creation of distinctive, durable fabrics for railroading—fabrics that are made of the finest mohair obtainable—spun and loomed in Massachusetts Mohair mills to specifications laid down by Massachusetts Mohair departments of research and design in cooperation with the railroads themselves.

DISTINCTIVE FABRICS MMP Co Mass Mohair

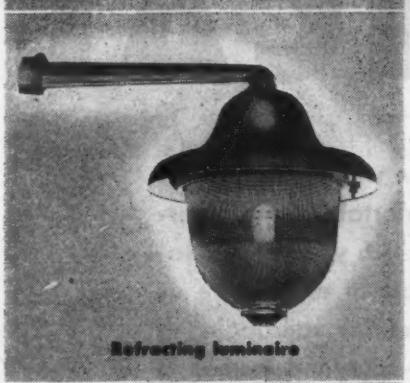
MASSACHUSETTS MOHAIR PLUSH CO.

BOSTON, MASS.: 80 FEDERAL ST. • NEW YORK CITY: 2 PARK AVE. • PHILADELPHIA, PA.: BEURY BLDG.
CHICAGO, ILL.: 80 E. JACKSON BLVD.

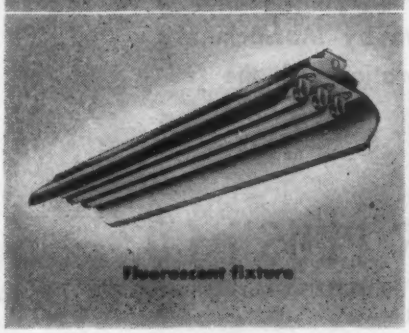
LIGHTING { for SHOPS · YARDS ROUNDHOUSES · PITS TUNNELS · PLATFORMS STATIONS · OFFICES

Dust-tight pendant unit

Portable floodlight



Refracting luminaire



Fluorescent fixture

LET A GRAYBAR LIGHTING SPECIALIST HELP MEET SPECIAL RAILWAY NEEDS

Good seeing is a "must" for efficient work and safety in railroad operating areas. Determining what constitutes adequate illumination is a highly specialized job. Graybar's Lighting Specialists are well qualified to analyze your lighting requirements scientifically—to provide the maximum in efficient, low-cost service for the longest time.

Shown at the left are typical lighting units distributed by Graybar. Graybar can supply the right fixtures (incandescent, fluorescent, or mercury), floodlights, lanterns, portable lamp guards, wiring transformers, control equipment—as well as the G-E Mazda lamps—for all your lighting needs.

Whether you are going to relight a few operating areas now—or are planning extensive post-war modernization—you will find it well worth while to talk over your requirements with the Graybar Lighting Specialist near you. *Graybar Electric Company, Graybar Building, New York 17, N. Y.*

4524

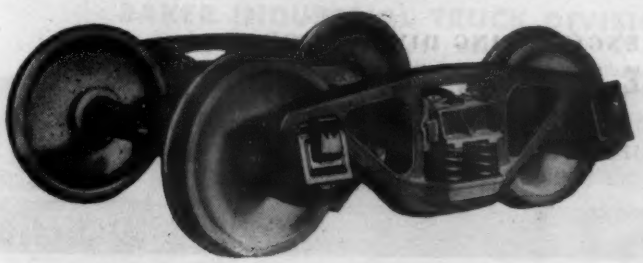
via GraybaR

IN OVER 80 PRINCIPAL CITIES

The A.S.F. Ride-Control Truck (A-3) is in the weight and price range of the conventional freight-car truck. It helps maintain an economical ratio between dead load and revenue load in freight-carrying equipment

MINT-MARK OF ⬡ FINE CAST STEEL

A·S·F *Ride-Control* TRUCK



LONG SPRING TRAVEL · CONSTANT FRICTION CONTROL

AMERICAN STEEL FOUNDRIES

CHICAGO

● *Houdaille engineers know the answers to scores of problems involving vibration control — and constantly are engaged in solving new ones.

Millions of Houdaille hydraulic instruments absorb the bound and rebound, the side-sway, the shimmying forces, which attack cars, trains and planes.

Out of this rich experience, we have been called upon to design energy-absorbing devices to control vibration on machine tools, crushing machines, power presses, drilling equipment, knitting machines, engine mountings . . . even the "water hammer" in pipe lines.

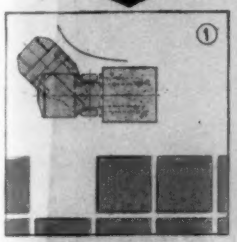
This advertisement is an open invitation to submit vibration problems of any kind to us. We shall be glad to share our experience with you.

HOUDE ENGINEERING DIVISION OF
HOUDAILLE-HERSHEY CORPORATION
MAKERS OF HYDRAULIC CONTROLS
BUFFALO 11, NEW YORK

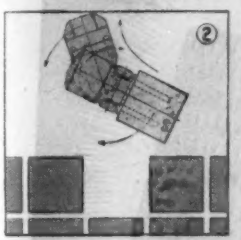
*Pronounced—Hoo-dye

New Baker ARTICULATED Fork Truck cuts aisle requirements

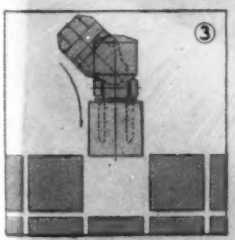
How the BAKER ARTICULATED FORK TRUCK saves time and space placing loads



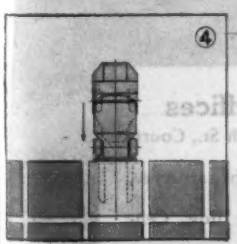
1. The driving section swings away from the load spot.



2. Both sections rotate about 25 degrees around turning center.



3. Truck articulates, lining load perpendicular to aisle.



4. Truck moves forward, spotting load in position.

Revolutionary new principle increases available storage area.

Designed primarily for efficient warehouse operation

A basically new design* involving a new method of steering by "articulating" the frame, permits swinging the load to line it up in position without lining up the truck itself. Thus this truck requires about two feet less space for placing loads at right angles to aisles. It needs less clearance on turns, and speeds carloading or any other handling operation where loads must be lined up or positioned in congested areas.

Specific advantages of this truck are:

1. **Works in narrower aisles.**
2. **Turns in a smaller radius.**
3. **Spots loads quicker and easier.**
4. **Control units are more accessible.**
5. **Simpler Steering design cuts maintenance.**
6. **Permits mechanization of handling where hand trucks were necessary because of space limitations.**

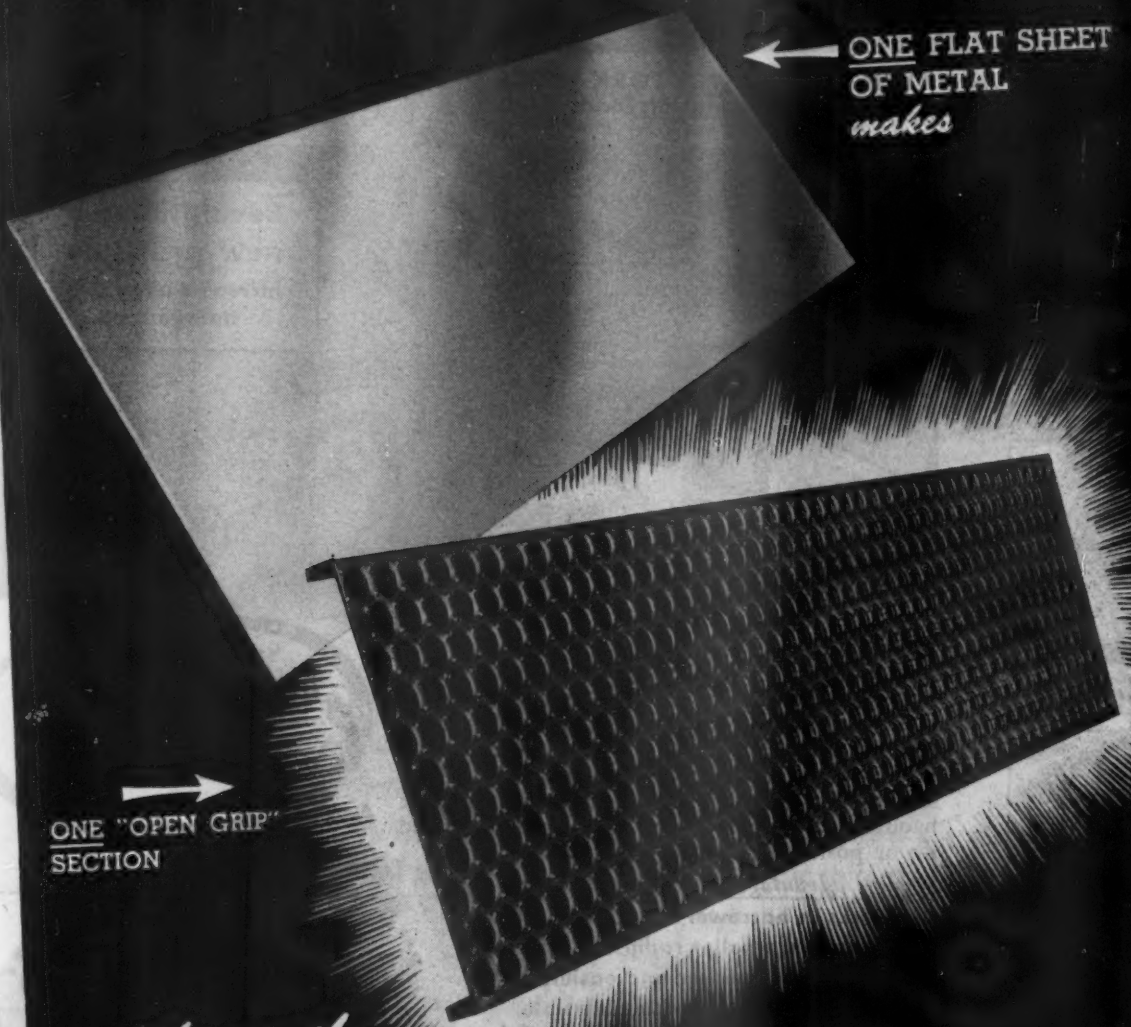
Field tests in both warehouse and production operation have proved the many advantages of this new truck. For complete specifications request Bulletin 1330.

*Licensed under Stevenson Patent No. 2,284,287.

BAKER INDUSTRIAL TRUCK DIVISION *of The Baker Raulang Company*
2172 WEST 25th STREET • CLEVELAND, OHIO
In Canada: Railway and Power Engineering Corporation, Ltd.

Baker INDUSTRIAL TRUCKS

"OPEN GRIP" RUNNING BOARD IS OF ONE PIECE CONSTRUCTION



without the aid of a solitary
LOCK JOINT, BOLT, RIVET OR WELD

District Sales Offices

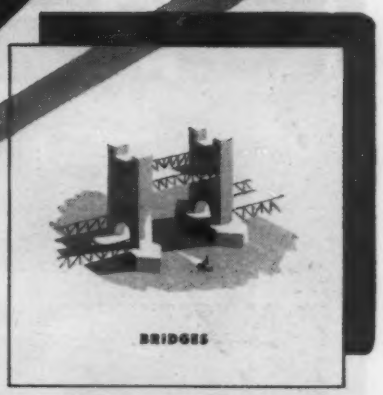
New York, N.Y.—30 Church St., Courtland 7-7542
Chicago, Ill.—332 S. Michigan Ave., Wabash 6789
St. Louis, Mo.—Paul Brown Bldg., Central 3348
St. Paul, Minn.—E906 First National Bank Bldg., Cedar 1940
Washington, D.C.—6945 Wisconsin Ave., Bethesda, Md., Wisconsin 7378
San Francisco, Calif.—Room 223, 68 Post Street, Exbrook 0811

MORTON MANUFACTURING CO.

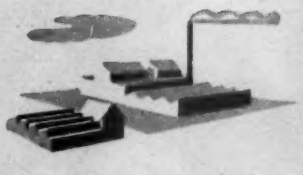
5105 WEST LAKE STREET • CHICAGO 44, ILLINOIS

CONSOLIDATED STEEL PRESENTS...

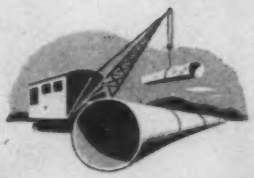
...seven ideas in steel—the kind of jobs Consolidated Steel is prepared to help you plan and build *now*.



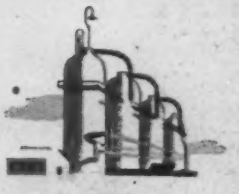
BRIDGES



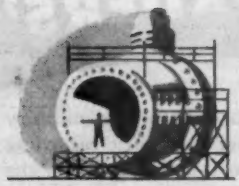
INDUSTRIAL BUILDINGS



PIPE LINES

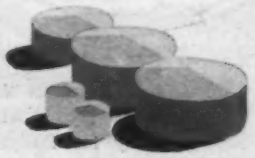


PETROLEUM EQUIPMENT



LARGE VALVES

TRANSMISSION TOWERS



TANKS

If your postwar plans call for precision steel fabrication, Consolidated Steel is ready to offer you swift, capable service. Address Consolidated Steel Corporation, 5700 South Eastern Avenue, Los Angeles 22, California. Other plants at Orange, Texas, and at Long Beach, Wilmington, and Newport Beach, California.

Largest Independent in the West

Consolidated Steel

FABRICATORS
ENGINEERS
CRAFTSMEN

"WE COULDN'T DO WITHOUT S-A WEIGHT RECORDERS"

So said an executive at a railroad classification yard which has weighed 15 to 100 cars daily for 20 years with Streeter-Amet automatic weight recorders.

"To us," . . . continues the executive, "it means:

1. *Continuous, speedy flow of our freight traffic.*
2. *Absolute minimum of weight complaints.*
3. *No unnecessary re-handling.*

"About half our yard help is in the military service, and Streeter-Amet automatic recording has been terrifically important in offsetting the inexperience of help which makes for mistakes and subsequent argument and customer friction.

"Freight traffic is heavy and S-A speed of motion weighing has helped to maintain top service. Weighers can be handled without reduction of average speed between the hump and classification tracks."

"It all adds up to steamlined operation for us."

Streeter-Amet recording will weigh six to one ahead of hand weighing. It will cut operating costs, and improve general efficiency. Write today for a free engineering survey.

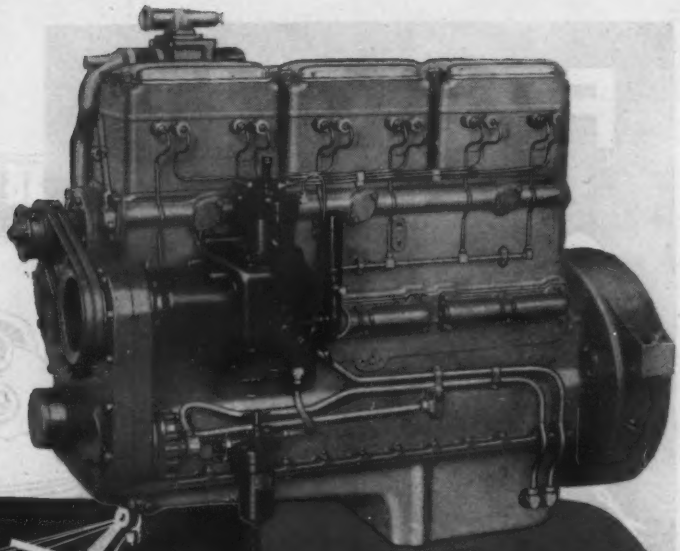
STREETER-AMET

STREETER-AMET COMPANY

4109 North Ravenswood Avenue, Chicago 13, Illinois

Automatic weighers, Recorders, Scales and Services · Founded 1888

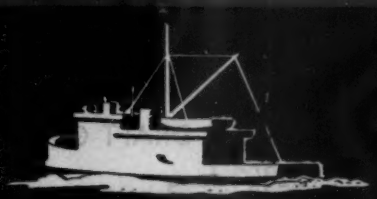
Jobs for PROVED POWER are jobs for CUMMINS DIESELS



More than 90% of all the long-line, franchise-operated, heavy-duty, diesel-driven trucks now operating in the 11 Western States are Cummins-powered.

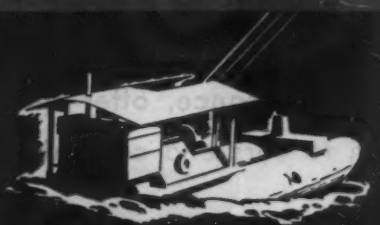
Any list of the nation's major contractors is a list of Cummins Diesel owners. Their records prove that . . . "powered by Cummins is powered for profit."

On the rich Mesabi Iron Range, more than 80% of the rubber-tired earth and ore moving equipment is powered by Cummins Dependable Diesels.



Service facilities at some 40 salt water and fresh water ports . . . one more reason why so many commercial and pleasure craft are Cummins-powered.

In the vast Mid-Continent Area—the world's greatest oil producing region—Cummins Dependable Diesels power more drilling rigs than any other diesel.



In the Northwest Woods, no single make of diesel engine powers as many yarders, loaders and heavy-duty trucks as Cummins Dependable Diesels.

Some 220 leading builders of powered equipment now offer Cummins Diesels as standard or optional original power . . . proof of proved performance!

CUMMINS Dependable DIESELS

SINCE 1918...PIONEER OF PROFITABLE POWER THROUGH HIGH SPEED DIESELS

For every heavy-duty power application—automotive, portable, stationary and marine—a proved-on-the-job Cummins Dependable Diesel . . . 50 to 275 hp.

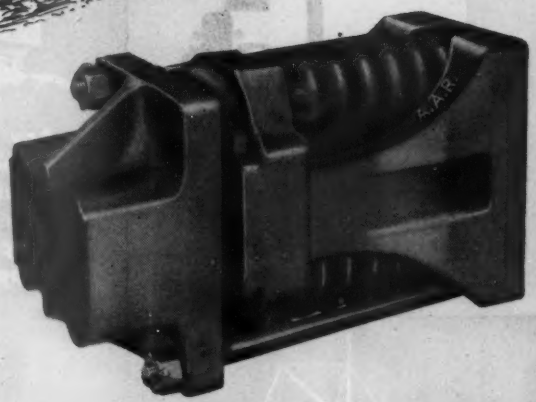
CUMMINS ENGINE CO., INC.
Columbus, Indiana

FREIGHT OR *Passenger*

They must be kept in service

In these times of emergency when cars and equipment, both freight and passenger, are being pushed to the utmost, it is imperative that every precaution be taken for their protection.

National Draft Gears by their smooth action, high shock absorption capacity, sturdiness and endurance, offer the maximum protection to cars and contents.



NATIONAL M-17-A DRAFT GEAR
22 3/8" long
A.A.R. Approved

NATIONAL K-4 DRAFT GEAR
Designed especially to meet the requirements of high speed passenger service.

NATIONAL M-50-B DRAFT GEAR
20 1/8" long
A.A.R. Approved

NATIONAL MALLEABLE AND STEEL CASTINGS CO.
General Offices: CLEVELAND, OHIO
Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco.
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

AR

GEAR

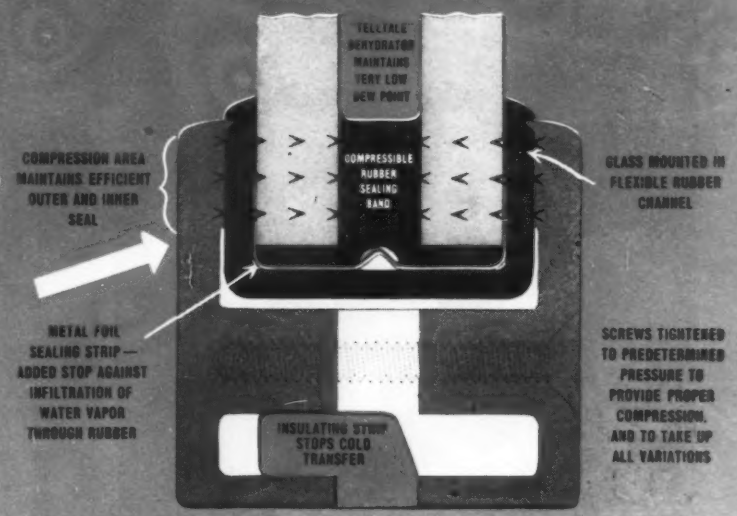
O.

VAY AGE

ALUMINUM..
METAL OF THE FUTURE

The utilization of aluminum and its alloys has made possible the giant airplanes of today . . . will make possible the still larger airliners of tomorrow.

IN THE NEW EDWARDS DOUBLE SEALED DEHYDRATED SASH


TELLTALE DEHYDRATOR MAINTAINS VERY LOW DEW POINT
COMPRESSION AREA MAINTAINS EFFICIENT OUTER AND INNER SEAL
COMPRESSIBLE RUBBER SEALING BAND
GLASS MOUNTED IN FLEXIBLE RUBBER CHANNEL
METAL FOIL SEALING STRIP — ADDED STOP AGAINST INFILTRATION OF WATER VAPOR THROUGH RUBBER
SCREWS TIGHTENED TO PREDETERMINED PRESSURE TO PROVIDE PROPER COMPRESSION, AND TO TAKE UP ALL VARIATIONS
INSULATING STRIP STOPS COLD TRANSFER

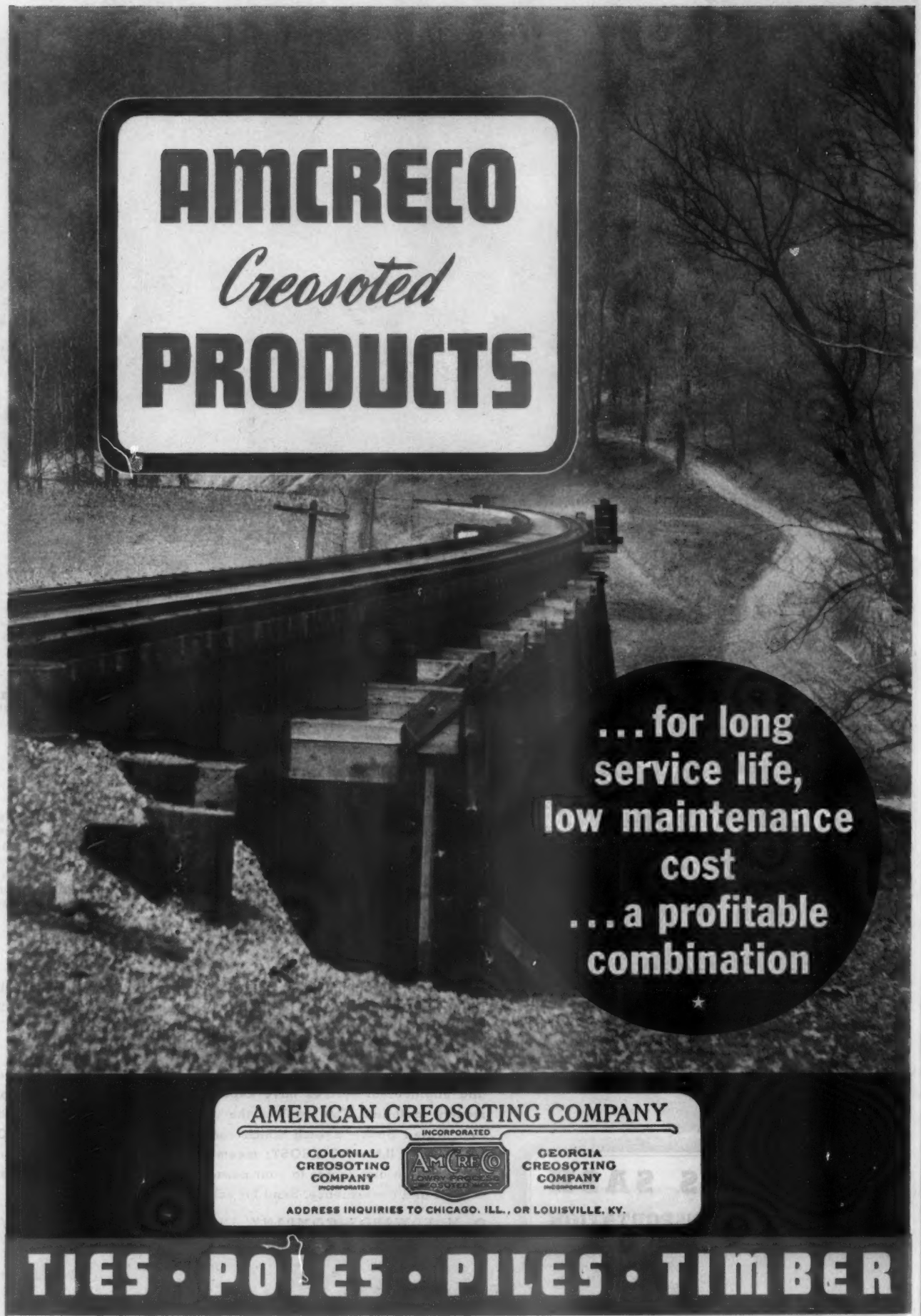
EDWARDS SASH
THE EYES OF TRANSPORTATION

For modern, streamlined design, attractive appearance, lightness with strength and all around adaptability, frames of the new EDWARDS Double Sealed Dehydrated Sash are constructed of aluminum . . . "metal of the future."

In these new postwar "eyes of transportation," EDWARDS designed and engineered features have kept pace with the development of modern materials. The result is the new EDWARDS Double Sealed Dehydrated Sash—a sash which combines the advantages of NO FOG—NO FILM—NO FROST; meets every requirement of modern coach design and brings to your passengers new standards of travel comfort and convenience. Send for complete information.

O. M. EDWARDS COMPANY, INC. SYRACUSE, N. Y.

SASH FOR EVERY TYPE OF TRANSPORTATION — ON LAND, ON THE SEAS, IN THE AIR


AMCRECO
Creosoted
PRODUCTS
...for long service life, low maintenance cost ...a profitable combination
AMERICAN CREOSOTING COMPANY
INCORPORATED
COLONIAL CREOSOTING COMPANY INCORPORATED
AMCRECO LOWRY PROCESS CREOSOTED
GEORGIA CREOSOTING COMPANY INCORPORATED
ADDRESS INQUIRIES TO CHICAGO, ILL., OR LOUISVILLE, KY.
TIES · POLES · PILES · TIMBER

Keeps 'em rolling—faster

EVERY MINUTE saved in yard operations is money saved. Getting cars unloaded—empties out of the yard and back into service—routing traffic—all of these operations can be expedited with the G-E Super-Aire Speaker.

Your instructions reach every part of the yard clearly, intelligibly—and without delay. The man you want or the crew you want is always within range of your voice.

The Super-Aire Speaker can be used in such widely diversified fields as: construction projects, surface mining, ranching, harbor control, public utilities, highways, motion picture directing, airports, etc.

Points within a wide area can be reached to get speedy action—when you need it—where you need it.

Write for complete information to: Electronics Department, Specialty Division, General Electric Company, Syracuse, New York.

See your G-E distributor for Universal Radio Parts, P. A. Systems, Crystals, Receiving, Industrial and Transmitting Tubes, Laboratory and Service Test Equipment.

RA 9

Electronics Department
General Electric Company, Syracuse, N. Y.

We are interested in further information concerning the G-E Super-Aire Speaker for

☐ Our own use
☐ Resale Distribution

Name.....

Company.....

Address.....

GENERAL ELECTRIC

Planners of the future plan with "U.S." KOYLON FOAM

PLANES: Koylon lightness fits plans for tomorrow's plane interiors.

HOTELS: Koylon comfort meets schemes for room, lobby and restaurant furnishings in tomorrow's hotels

TRAINS: Koylon all-condition restfulness is ideal for the cars of tomorrow's streamliners.

BUSSES: Koylon clean, cross-country comfort is perfect for tomorrow's busses.

TRUCKS: Koylon durability is particularly valuable to tomorrow's trucks.

INTERIORS: Koylon adaptability is especially suited for upholsterers and designers of tomorrow's interiors.

You can plan with Koylon, too

If you're tomorrow-minded—you're bound to be Koylon-minded. Because, after the war, "U. S." Koylon Foam will return—*Comfort Engineered* to meet your particular requirements.

For ten years, Koylon has proved the ultimate in comfort. To sit or lie on Koylon means to be caressed in bottomless comfort that only a combination of pure air and buoyant rubber latex can give.

Koylon comfort is equalled by its vermin-free, perspiration-free cleanliness. Koylon durability makes it amazingly economical. Not only does Koylon keep its shape permanently, but its even support gives longer life to the upholstery around it. Repairs, renovations, replacements become rarities, because Koylon has no troublesome supporting parts.

Comfort Engineered "U. S." Koylon Foam merits a place in your future plans.

Comfort Engineered

"U.S." Koylon FOAM

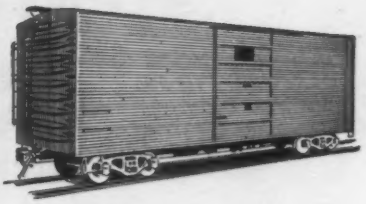
1230 SIXTH AVENUE · ROCKEFELLER CENTER · NEW YORK 20, N. Y.

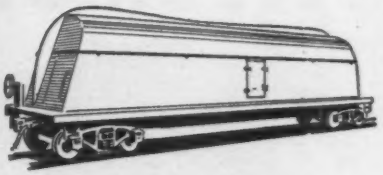
Serving Through Science

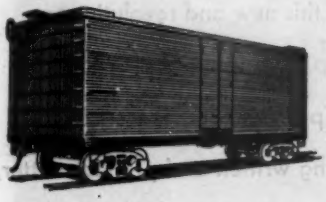
UNITED STATES RUBBER COMPANY

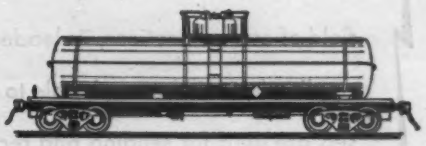
ALLOY STEEL FREIGHT CARS

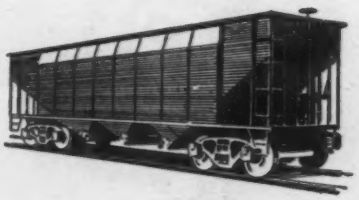
weigh less and last longer..











...than the cars you used to buy

Ask the car superintendents on the roads that use alloy steel cars. They will tell you that rolling stock of alloy steel is still giving efficient service after many years of strenuous wear. They will also tell you that these box and open cars can carry two to five extra tons of freight, because of the favorable weight-load ratio of alloy steel cars.

Coal cars made of alloy steel not only carry extra tonnage, but their corrosion resistance assures longer life. Corrosion resistance is important in refrigerator cars too, for dampness and the brine used in refrigerating systems cut down the life expectancy of cars made of ordinary steel.

Where extreme corrosion resistance is required for the transportation of strong chemicals, stainless steel is the alloy steel used. In milk cars, stainless steel is chosen, because its easy-to-clean, permanently smooth surface protects the purity of milk.

Now that you are buying new equipment, be sure that the cars you choose are made of steels that have a record of long and profitable service. While we do not make steel, we have had 38 years' experience in the manufacture of the ferro-alloys that give alloy steels their special properties. If you have questions about alloy steels for railroad equipment, write to us for further information.

BUY UNITED STATES WAR BONDS AND STAMPS

ELECTRO METALLURGICAL COMPANY
Unit of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.

ELECTROMET Ferro-Alloys and Metals
are sold by Electro Metallurgical Sales Corporation, and
Electro Metallurgical Company of Canada, Limited, Welland, Ontario

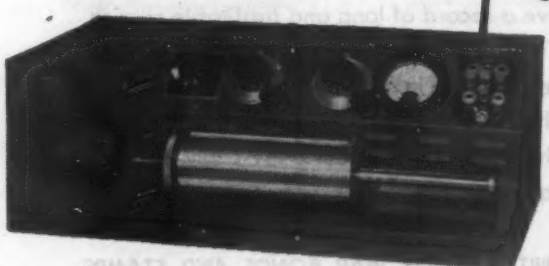
Electromet
Trade Mark
Ferro-Alloys & Metals

1935
FACSIMILE COMMUNICATIONS
1945

Since 1935, the engineering staff of Times Telephoto Equipment Inc. and its predecessor company has been engaged exclusively in developing and producing facsimile communications equipment.

Times Telephoto's long experience in this new and revolutionary field of communications, its leadership in design and practical application, will be invaluable to the postwar user. These facsimile sets are used for sending and receiving written and printed matter, photographs and maps. They are standard equipment of the U. S. Signal Corps, Army Air Forces, Navy, the Office of War Information and some commercial companies and foreign governments.

When all military needs have been met, Times Telephoto Equipment Inc. will be ready to supply facsimile communications equipment especially designed to meet your particular requirements. Write today for your copy of the booklet, "Elements of Facsimile Communications."



HUNDREDS OF THIS MODEL ARE ALREADY IN SERVICE

TIMES TELEPHOTO EQUIPMENT INC.

A Subsidiary of The New York Times

229 West 43 Street — New York 18, N. Y.

The Fairbanks-Morse

2000-Hp. 125-Ton DIESEL LOCOMOTIVE

for Transfer and Short Haul Freight Service

Powered by a *single* engine... the 2000-hp., performance-proved, Fairbanks-Morse Opposed-Piston Diesel. We are now building a limited number for delivery in 1945.

Fairbanks, Morse & Co., Chicago 5, Illinois.

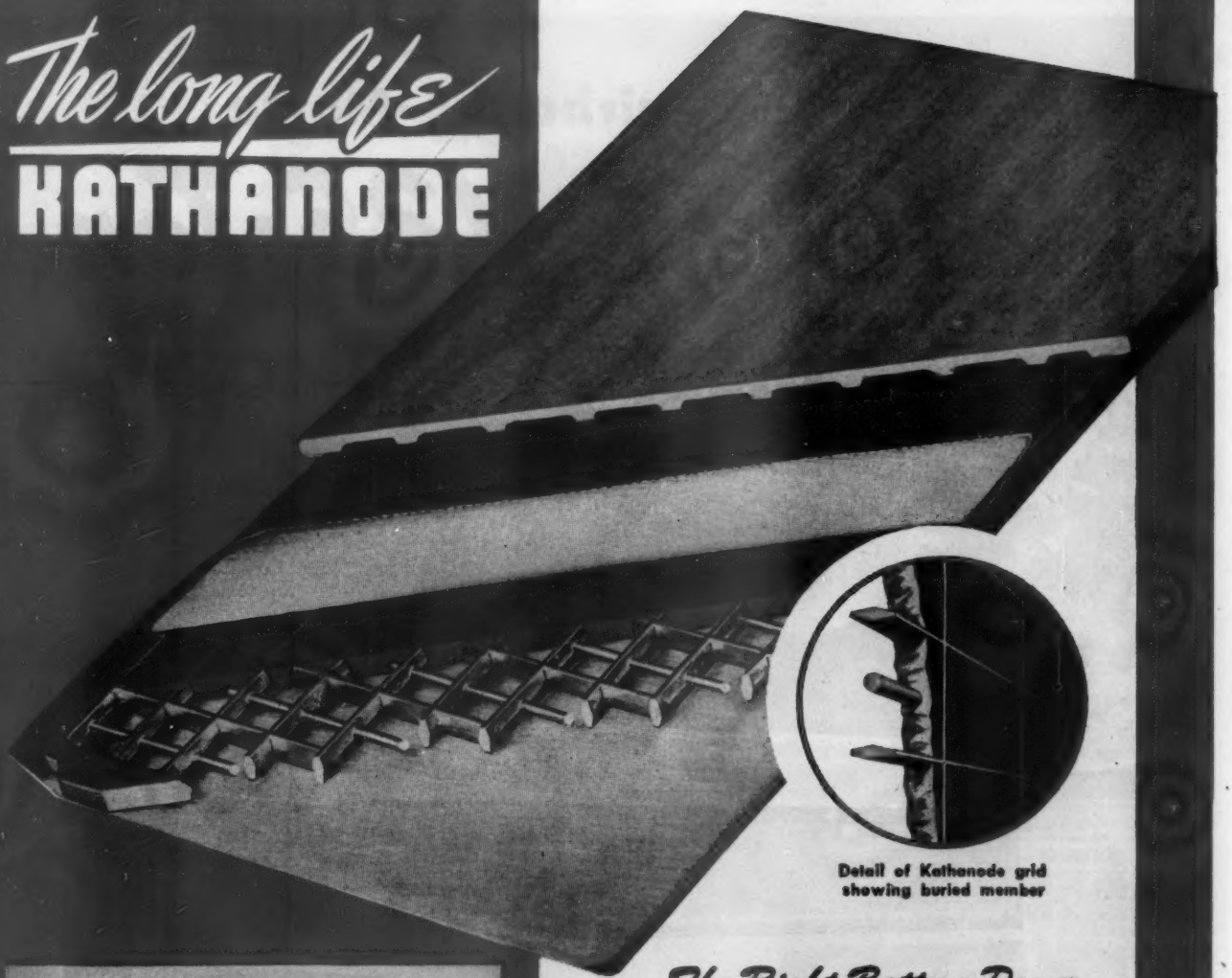
FAIRBANKS-MORSE

A name worth remembering

F M

TOMORROW'S POWER TODAY!

The long life KATHANODE



Detail of Kathanode grid showing buried member

The Right Battery Power FOR DIESEL OPERATION

Kathanode delivers high sustained voltage for starting Diesel locomotives. Because of its special construction it will do this every day for the entire service life of the battery.

The sustained charging encountered in Diesel locomotive service tends to peroxidize or corrode exposed parts of the grid. This weakens the members and reduces conductivity.

In the Kathanode grid alternate round horizontal members have been added to provide extra conductivity. These are completely imbedded in the active material and, therefore, are not exposed to electrolytic action. The members retain maximum current carrying ability throughout the useful life of the battery.

Write Dept. 149 for Catalog 700 on Gould Kathanode Glassklad Batteries for Diesel Locomotive Service.

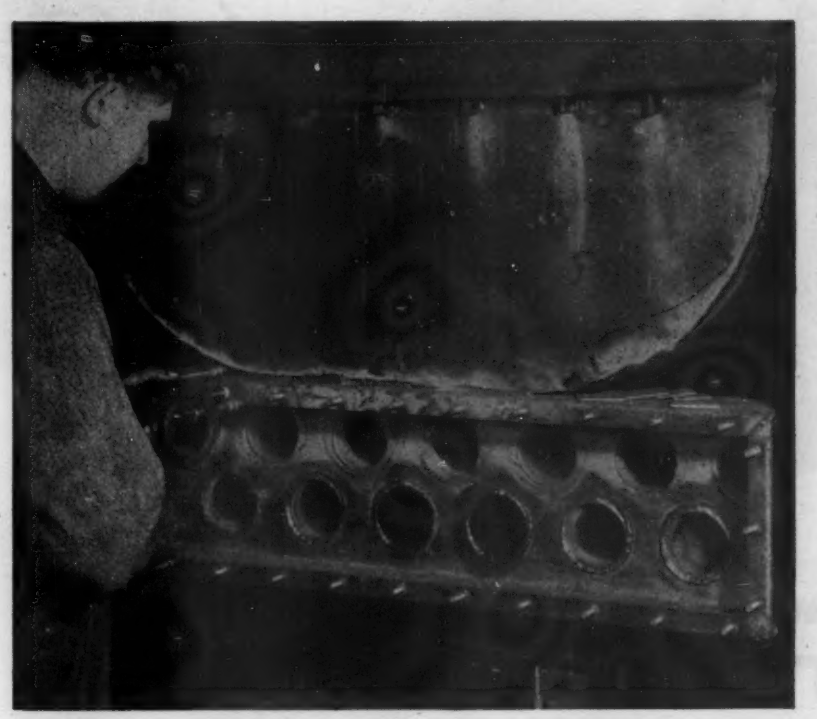
GOULD

PIONEER OF GLASSKLAD CONSTRUCTION

GOULD STORAGE BATTERY CORPORATION

Depew, N. Y. Factories: Atlanta • Chicago • Dallas • Depew • Leavenworth • Los Angeles • North Bergen • Rock Island • St. Paul • Sioux City • Zanesville

Nelson *Automatic* Stud Welding saves time and material!



Nelson Stud Welding saves time and material because it eliminates drilling holes and tapping to secure studs. In *less than a second* studs from ⅜" to ¾" diameter are secured. Automatic operation and accurate arc timing control produce complete fusion of the stud to metal. Operators are trained quickly and produce consistent results.

Thousands of stud welders are now used by more than 750 industrial plants and shipyards . . . because 500 to 1000 studs per operator can be secured per shift.

For rapid *precision* production of stud welded parts single and multiple stud welding units are available which weld one or more studs of various sizes at the rate of 20 to 30 welds per minute.

Write today for complete information on this time and material-saving equipment:

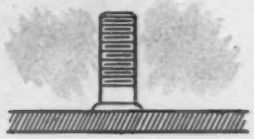
NELSON SPECIALTY WELDING EQUIPMENT CORP.

Dept. RA, 440 Peralta Avenue
San Leandro, California

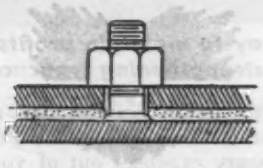
Eastern Representative: Camden Stud Welding Corp., 1416 South Sixth Street, Camden, N. J.

HOW NELSON STUDS ELIMINATE DRILLING AND TAPPING

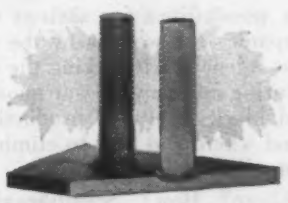
After layout and center-punching a stud is placed in the gun chuck. The pointed end is located in the punch mark and the trigger pulled. Instantly the arc flashes and the weld is made. The operator loads again and proceeds to the next weld.



Complete fusion between stud and metal results . . . drilling and tapping operations have been eliminated.



Cover and gasket fit easily and a neater result is obtained. One gun welds any diameter stud — a standard welding machine is used.



Cutaway of typical stud weld. Etched with Nital to show penetration.

How to keep costs from "HITTING THE CEILING"...

A way to maintain profits and employment while strengthening your competitive position

EVEN AFTER reconversion and government price controls are eased... the problem of streamlining unnecessary expenses out of your business remains.

Individual company profits, employment and the entire national economy seek a *higher* level only as costs seek a lower level. Only as *more* is offered for *less.* Only as more—and better products and services are put within reach of more pocketbooks.

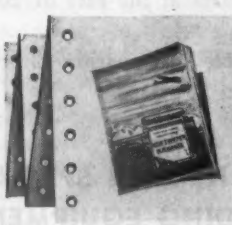
How can costs be trimmed further?

New possibilities for savings were discovered by many companies (as well as by the Army, Navy and Government Agencies) in licking the critical problem of manufacturing and moving war goods faster. In searching out road blocks to faster production and distribution, they found where and how to eliminate needless *costs* as well as needless *delays.*

Where? How? Scientific analyses of record systems of control conducted by Standard Register representatives spotted useless motions, waste, inefficient use of men, materials and machines. The savings, resulting from better control and less paperwork, were in many instances *tremendous.*

Could you use such savings, today?

Our technical facilities are available to help meet your problems of reconversion and postwar operations in the development of adequate and efficient Systems of Control. Call a Standard Register representative today. He will apply an exclusive, wartime tested, practical technique to simplify your paperwork problems. Without upsetting your office routine, he will show you how to obtain better business record control... giving you a saving in time and costs.



WRITE for "A New Frontier in Business." It outlines in detail the services we offer. Send for your copy or ask for a representative to call and discuss your problems.

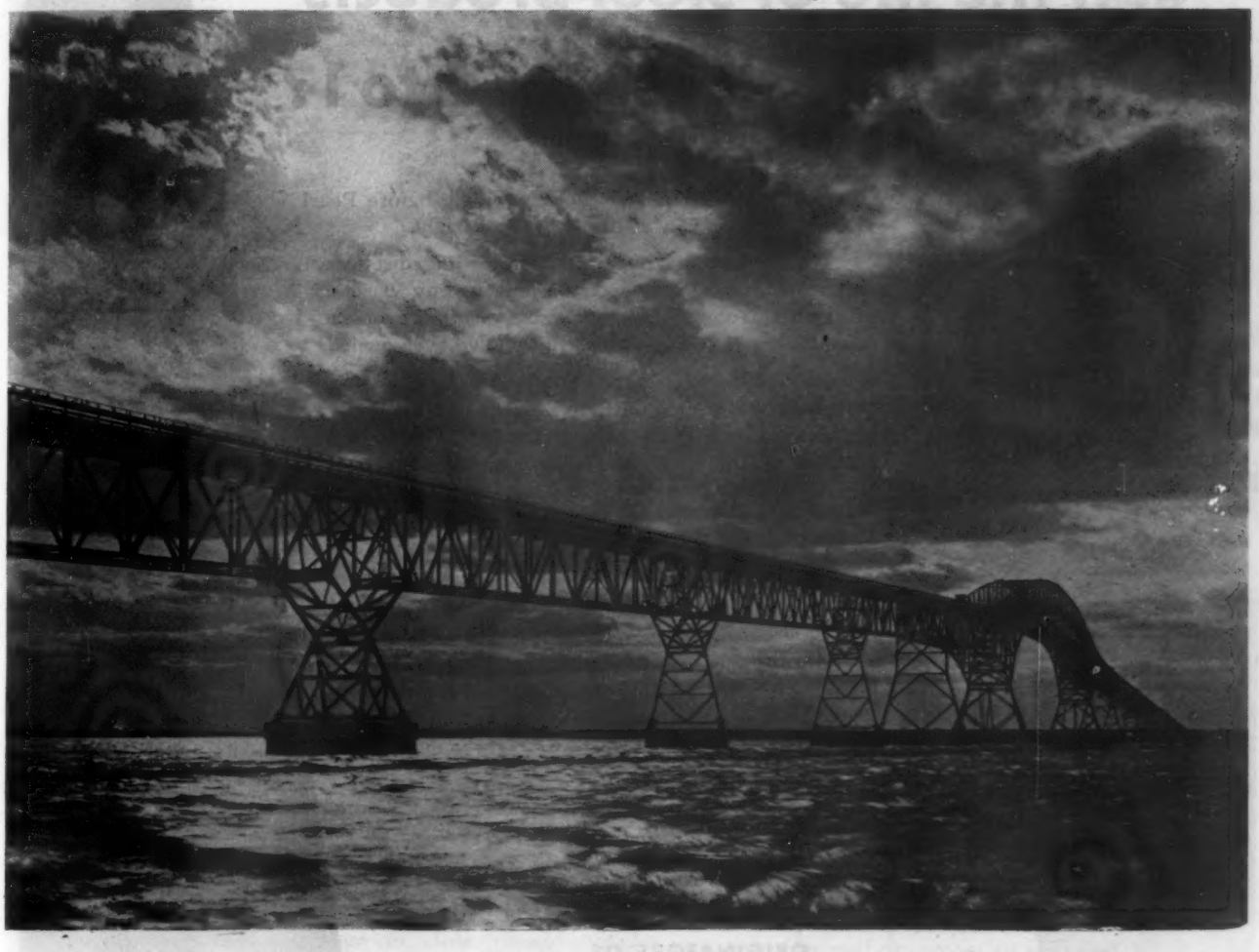
THE STANDARD REGISTER COMPANY

Manufacturer of Record Systems of Control for Business and Industry

DAYTON 1, OHIO

Pacific Coast: Sunset McKee-Standard Register Sales Co., Oakland, California. Canada: R. L. Crain Limited, Ottawa. London: W. H. Smith & Son, Ltd.

WE BUILD BRIDGES



The building of the sub structure of this great highway bridge between Ludlow Ferry, Md., and Dahlgren, Va., by the Merritt-Chapman Scott Corporation involved the solution of construction problems of the first order including the driving of inclined steel "H" piles up to 215 feet in length.

Your most difficult problems are in our field.

ENGINEERING CONSTRUCTION DIVISION

MERRITT-CHAPMAN & SCOTT CORPORATION

FOUNDED
1860

17 BATTERY PLACE **NEW YORK 4, N. Y.**

Can the life of steel products really be increased by 4 to 1?

"SOUNDS impossible," you say? Well, before Pearl Harbor you would have been right.

Then something happened. A startling discovery that means you may soon be able to buy washing machines, automobiles, hardware, *many* important metal items that can outlast any you've ever owned before by 4 to 1!

The discovery is CORRONIZING, a miraculous new weapon against corrosion and rust. Invented by scientists of the Standard Steel Spring Company, CORRONIZING is a new alloy "armor" that *far outlasts other rust-resisting coatings for steel.*

This is no mere claim. It has been proved in the war, on land and sea in every kind of climate. Progressive manufacturers and retailers will soon be able to bring you products made with "Corronized" steel. Motor car makers—always a step ahead—may be among the first to offer this sensational advantage.

So watch for the wonderful new products that will be made with "Corronized" steel. They can defy rust ... keep their beauty and safety years longer ... increase the service you get for your money as much as 4 to 1.

Standard Steel Spring Co.

ORIGINATORS OF

CORRONIZING

Quick Facts for Manufacturing and Sales Executives

Do not confuse CORRONIZING with other metal coatings. This patented process provides a permanent alloy "armor" with 5 layers of defense against corrosion! It becomes part of the steel base ... can be worked in any manner. Permits using lighter materials by prolonging steel's period of greatest strength. Write for samples and complete information.

STANDARD STEEL SPRING COMPANY
CORAOPOLIS, PENNSYLVANIA

INSIDE and OUT

Republic ELECTRUNITE Boiler Tubes are made of highest quality flat-rolled steel, cold formed into shape and electrically welded into strong, sound tubing. Thus, the surface which becomes the inside wall of the tube is free from hidden defects, because it is inspected just as closely as the outside surface.

Positive Visual Inspection Assures Greater Dependability in Electrunite Boiler Tubes

Inside and outside, you are assured of clean, scale-free surfaces throughout every length of Republic ELECTRUNITE Boiler Tubes.

Why? Because ELECTRUNITE Boiler Tubes are cold formed from flat-rolled steel, both sides of which are open to close visual inspection.

But that's not all! There are other reasons why it pays to use Republic ELECTRUNITE Boiler Tubes.

These *modern* boiler tubes speed up retubing. They are free from hard spots—are uniformly high in ductility—because they are full normalized throughout their entire length.

And because they are consistently uniform in wall thickness, diameter and roundness, ELECTRUNITE Boiler Tubes slide in freely, roller expand smoothly and bead over to tight, non-leaking joints in a hurry.

As an added safeguard of uniformly high quality, samples taken at regular intervals during production undergo a rigid testing routine—and every tube is subjected to a hydrostatic pressure well in excess of code requirements before it leaves the factory.

ELECTRUNITE dependability is proved by the fact that more than 150,000,000 feet have been installed in all types of steam generating and heat transfer equipment.

For more information about ELECTRUNITE Boiler Tubes and the Electric Resistance Weld Process by which they are made, write for your copy of our new brochure.

REPUBLIC STEEL CORPORATION
STEEL AND TUBES DIVISION • CLEVELAND 8, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

Republic
ELECTRUNITE
BOILER, CONDENSER AND HEAT EXCHANGER TUBES

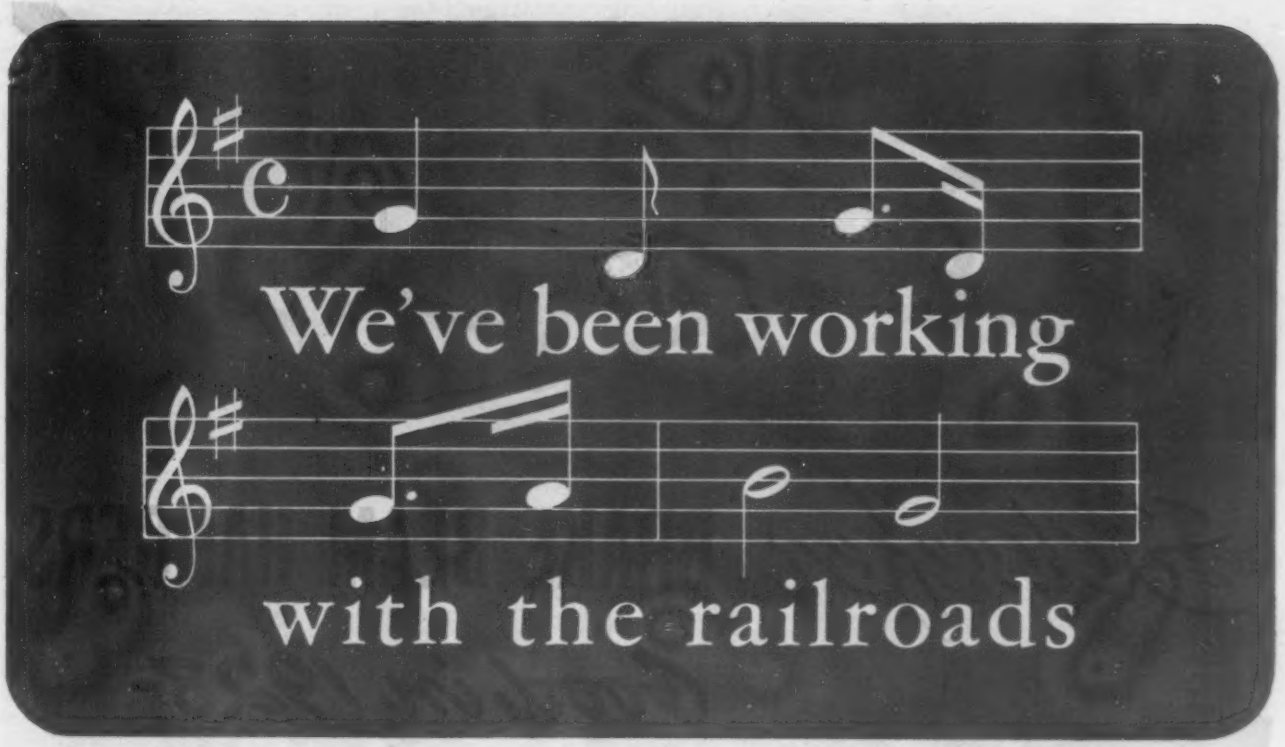
Barber Stabilized Trucks

Assure *Smooth Riding* Freight Cars

The Friction pressure developed with Barber Stabilized Trucks to control the vertical harmonic action of springs is in proportion to the car load — NOT A FIXED PRESSURE.

Selected for over 95,000 cars by 55 Railroads and Private Car Lines

STANDARD CAR TRUCK COMPANY
332 SOUTH MICHIGAN AVENUE CHICAGO 4, ILLINOIS



GLIDDEN has never regarded America's railroads as "just another Customer". We have never considered *your* paint requirements as general, run-of-the-mine business.

For many years you railroaders have been our No. 1 preferred customers and we have made a close and continuing study of your paint problems. The result is that we have acquired a vast fund of experience and "know-how" which is invaluable in its application to the specific paint problems of the railroad industry. This tailor-made railroad paint service has been of great service in helping railroads meet the terrific strains of wartime demands. One example is TWO-A-DAY car painting, a development of Glidden Railroad Technical Service which has substantially reduced time-off for painting.

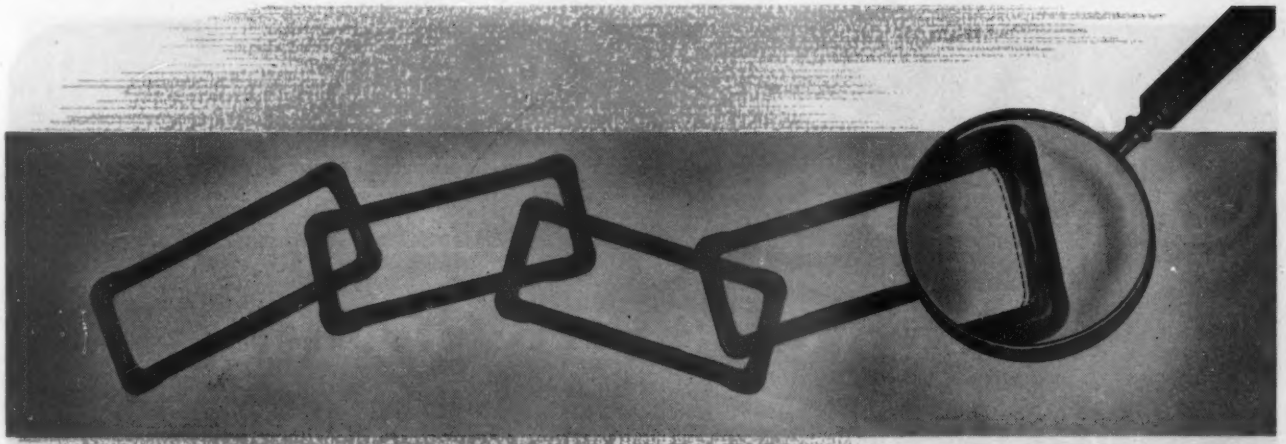
Yes, we've been working with the railroads for a long time. And we are in a position to render you an unequaled paint service for the duration and in the postwar period.

The strategic location of Glidden's eight plants and research laboratories makes service on special or routine paint requirements quickly available, wherever you are located. Just drop us a line.

TIME-TESTED

THE GLIDDEN COMPANY • Cleveland 2, Ohio

GLIDDEN *Pacemaker in Paints*



Schaefer BRAKE BEAM HANGERS

Good in 1928- Better in 1945

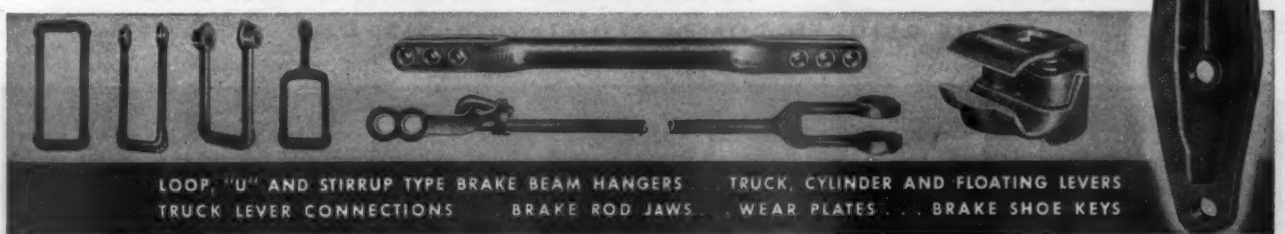
Get the Complete Story of the *Schaefer* Less Weight-Full Strength Design ... Write for this New Catalog

A Western car owner first installed Schaefer Loop Hangers in 1928. Recently, after 16 years of service, a complete set of hangers was removed at our request. Inspection disclosed little wear and also *uniform* resistance to wear.

Good as these hangers were in 1928, Schaefer Loop Hangers of today are better because they are forged to conform to more advanced practices and quenched within a more closely controlled temperature range.

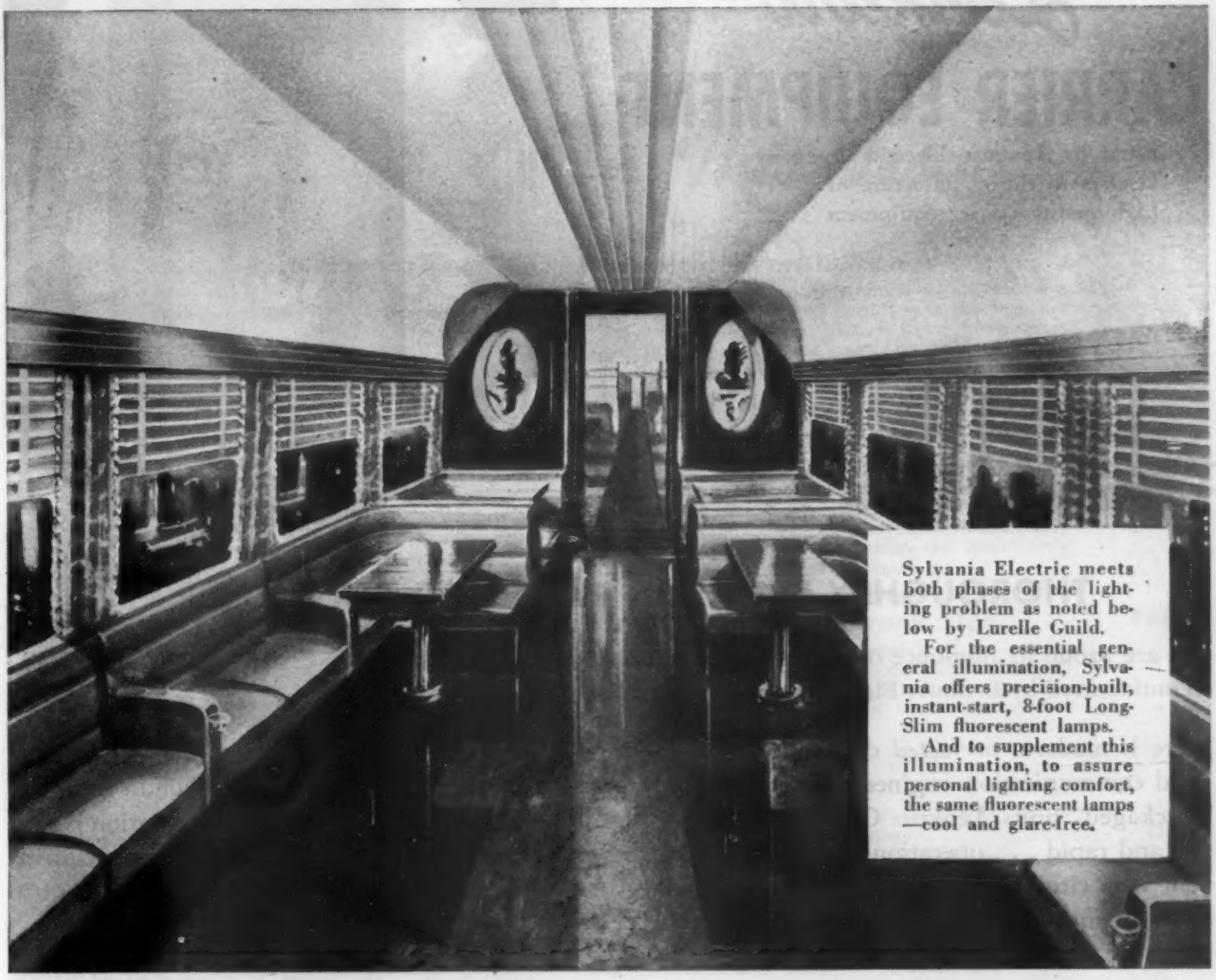
Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING • PITTSBURGH, PA.


LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS
TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS
BRAKE ROD JAWS
WEAR PLATES
BRAKE SHOE KEYS

Railway Lighting Ideas

by LURELLE GUILD



Sylvania Electric meets both phases of the lighting problem as noted below by Lurelle Guild.

For the essential general illumination, Sylvania offers precision-built, instant-start, 8-foot Long-Slim fluorescent lamps.

And to supplement this illumination, to assure personal lighting comfort, the same fluorescent lamps —cool and glare-free.

Fluorescent Lamps and Electric Light Bulbs by SYLVANIA

"IN approaching the problem of lighting the modern railway lounge car, two fundamentals should be considered," suggests Lurelle Guild, noted industrial designer.

These are—and we quote Mr. Guild—"First, provision should be made for indirect, overall illumination for the essential well-lit, cheerful atmosphere. This, I find, is best accomplished by having long lines of fluorescent lighting extend the full length of the car, hanging about 2 inches down from the headliner, and further diffused by a ground glass shield.

"Secondly, for individual comfort, the same type fluorescent lamps can be installed behind the window valences—casting attractive illumination toward the seats in addition to the headliner." (Note illustration above.)

SYLVANIA ELECTRIC

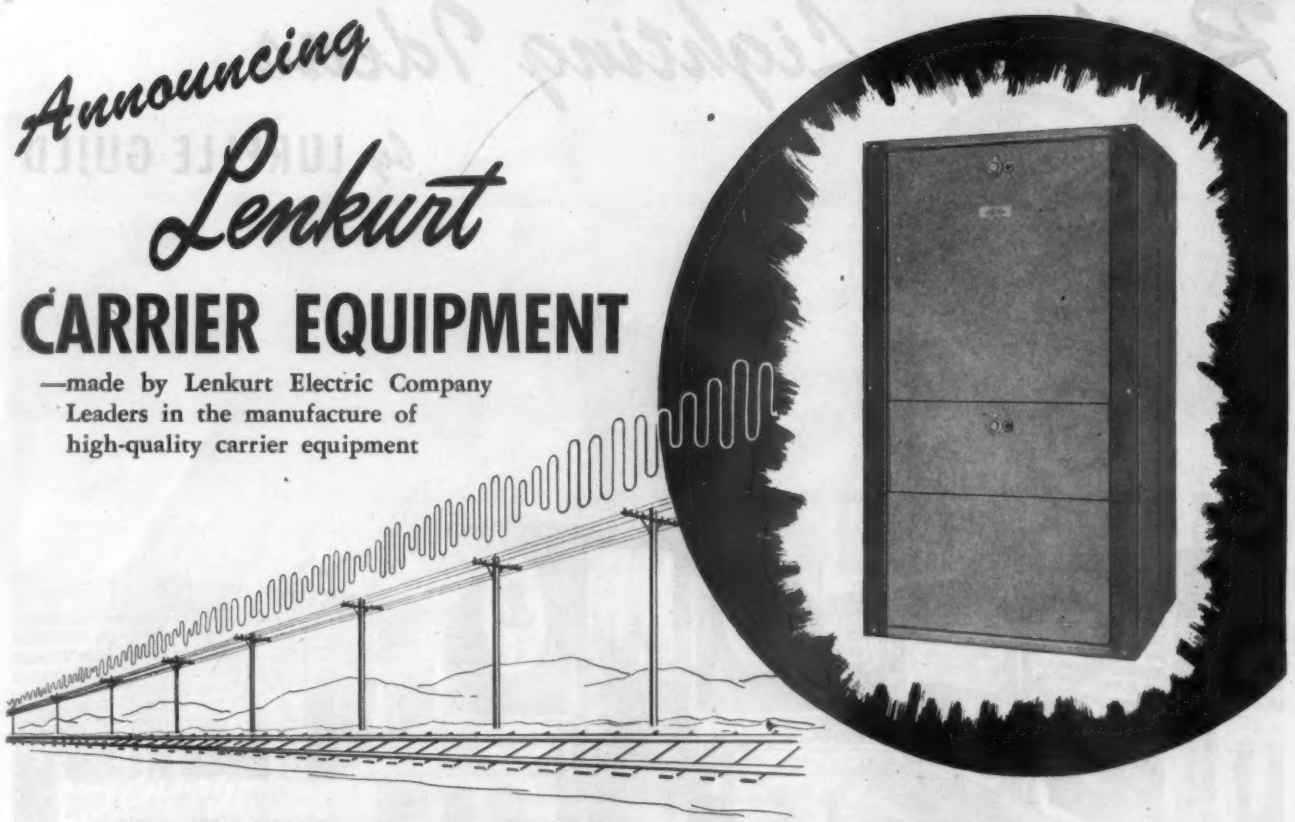
MAKERS OF FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

Announcing

Lenkurt

CARRIER EQUIPMENT

—made by Lenkurt Electric Company
Leaders in the manufacture of
high-quality carrier equipment



THOROUGHLY TESTED IN RAILROAD SERVICE

We are proud to announce our appointment as distributors of LENKURT CARRIER EQUIPMENT, manufactured by Lenkurt Electric Company, San Francisco, California.

Here is modern, *perfected* carrier equipment—developed through the cooperation of practical railroad communication engineers, after years of test and actual use of earlier types. Made in complete "packaged" units, Lenkurt Carrier Equipment requires no engineering on the job. Installation is simple and rapid . . . operation is automatic . . . and maintenance is lower than the average for equivalent wire circuits. A wide range of types makes it possible to supply Lenkurt Carrier Equipment to meet various requirements of railroad service.

To introduce Lenkurt Carrier Equipment to executives and engineers, we have prepared a handsomely illustrated booklet which describes in simple language the many unique features of this modern equipment. May we send you a copy?

AUTOMATIC ELECTRIC
SALES CORPORATION

1033 WEST VAN BUREN STREET, CHICAGO 7, ILL.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 119 September 15, 1945 No. 11

PUBLISHED EACH SATURDAY BY THE SIMMONS-BOARDMAN PUBLISHING CORPORATION, 1309 NOBLE STREET, PHILADELPHIA 23, PA., WITH EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK 7, N. Y. AND 105 W. ADAMS STREET, CHICAGO 3, ILL.

WASHINGTON 4, D. C.: 1081 NATIONAL PRESS BUILDING, CLEVELAND 13: TERMINAL TOWER, SEATTLE 1: 1033 HENRY BUILDING, SAN FRANCISCO 4: 300 MONTGOMERY STREET, ROOMS 805-806, LOS ANGELES 14: 530 WEST 6th STREET, DALLAS 4: 4518 ROLAND AVENUE.

SAMUEL O. DUNN, CHAIRMAN. HENRY LEE, PRESIDENT. ROY V. WRIGHT, VICE-PRESIDENT AND SECRETARY. F. H. THOMPSON, F. C. KOCH, R. E. THAYER, H. A. MORRISON, J. G. LYNE, H. E. McCANDLESS, VICE-PRESIDENTS. J. T. DeMOTT, TREASURER.

SAMUEL O. DUNN, EDITOR. ROY V. WRIGHT, MANAGING EDITOR. JAMES G. LYNE, ASS'T. TO EDITOR. CHARLES LAYNG, WESTERN EDITOR. C. B. PECK. ALFRED G. OEHLER. E. L. WOODWARD. J. H. DUNN. H. C. WILCOX. NEAL D. HOWARD. GEORGE E. BOYD. WALTER J. TAFT. M. H. DICK. JOHN S. VREELAND. C. MILES BURPEE. ARTHUR J. McGINNIS. J. L. STOVER. C. B. TAVENNER. H. E. MEASON. CHARLES ROBINSON. GEORGE H. PARIS. LIBRARIAN: EDITH C. STONE. EDITORIAL ASSISTANT: BETTY KETCHUM.

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PAPERS (A. B. P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.).

SUBSCRIPTIONS, INCLUDING 52 REGULAR WEEKLY ISSUES, AND SPECIAL DAILY EDITIONS PUBLISHED FROM TIME TO TIME IN NEW YORK OR IN PLACES OTHER THAN NEW YORK, PAYABLE IN ADVANCE AND POSTAGE FREE. UNITED STATES, U. S. POSSESSIONS AND CANADA: 1 YEAR $6.00; 2 YEARS, $10.00; FOREIGN COUNTRIES, NOT INCLUDING DAILY EDITIONS: 1 YEAR, $8.00; 2 YEARS, $14.00. SINGLE COPIES, 25 CENTS EACH. H. E. McCANDLESS, CIRCULATION MANAGER, 30 CHURCH STREET, NEW YORK 7.

In This Issue

Page

The Silver Meteors—A Revenue Study ***435***

In 1939 the first streamline train service on the eastern coast was inaugurated between New York and Florida with the Seaboard Air Line's first seven-car "Silver Meteor"— Today there are six such trains and the service has been greatly extended— Growth of revenues and expenses, tabulated by 12-months' periods, are reported herein.

Supporting Assets Aid Northern Pacific ***438***

Sustained in part by substantial regularly recurring income from sources other than its railway operations, this company has never defaulted on principal or interest on its funded debt— This article tells of these income sources, territory and mileage, future traffic prospects, gives a summary of earnings, and deals briefly with physical property and equipment owned.

Higher Standards Coming, Say Track Men ***444***

While nine leading engineering and maintenance officers look for greater refinements and necessary maximum efficiency in performing track work, all are in agreement that basic changes in track structure are not expected— Their views are reported herein.

EDITORIALS

President Truman Goes New Deal 431
Transportation Policy, Pre-Civil-War Vintage 432
Human Side of Engineering 433
Those Dirty Windows 433
The British Were Ready 434
Less Than a Point a Meal 434
Index to Volume 118 434

GENERAL ARTICLES

The Silver Meteors—A Revenue Study 435
Supporting Assets Aid Northern Pacific 438
"Liberation" Locomotive for Europe, by H. H. Saunders 443
Higher Standards Coming, Say Track Men 444

GENERAL NEWS 448

WITH THE GOVERNMENT AGENCIES 452

REVENUES AND EXPENSES OF RAILWAYS .. 466

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

★

PRINTED IN U. S. A.

Constant visibility
Instant response —

with

"UNION"

CONTINUOUSLY CONTROLLED

CAB SIGNALS

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

ARMY E NAVY

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

A
Th
in
bu
pr
ra
th
in
li
A
th
in
to
it
w
th
pl
th
th
ra
n
to
to
lo
g

P
li
w
lo
re
g
te
di
T
li
th
g
d
w
th
th
th
th
p

H
ex
ti
ru
w
Ju
by
li
tr
pa
re
P
fe
is
tu
ri
"

T
T
si
w
k
ti
pr
bu
co
le

The Week at a Glance

ABC OF DEFENSE PLANNING: The A. A. R. is, here and there, protesting against the prospective use of war-built government-owned transportation property in a manner to undermine the railroads, which, although they have cost the government nothing, are not any less important to the national defense than pipelines and shipping. In particular, the A. A. R. has expressed its doubts as to the soundness of the government's converting its pipelines into natural gas carriers, to the undoing of the coal industry, and it doesn't want the government in the coastwise shipping business in competition with the railroads. Unless the national defense planners make it economically possible for the railroads to thrive in peace-time, when the next war emergency arises the necessary railroad facilities won't be there. The planners are fully aware that it takes money to provide ships and planes, but they seem to believe that railroad facilities are miraculously supplied, and that they can exist and grow without nourishment.

●

PLANE FARE PUBLICITY: The airlines have succeeded in making a big splash with the claim that their fares are now lower than railroad-plus-Pullman, as is reported in our news pages. Our account goes on to show that the railroads' extensive fare reductions in the 'Thirties never did "register" adequately with the public. The result was that the average citizen believed these fares to be much higher than they actually were. As a consequence, a great deal of potential railroad business doubtless didn't become actual at all, or went to buses—with bus riders believing they were saving far more than, in fact, they were. It can scarcely be doubted that the success of the airlines in publicizing the contention that their service is "cheaper than Pullman" establishes a definite competitive handicap for the railroads.

●

HOMEWARD TROOPS: All soldiers, except members of the Army of Occupation, will be home from Europe by February, and all except occupation troops will have returned from the Orient by next June. These are the "target" dates set-up by the Transportation Corps and made public by Major General C. P. Gross, chief of transportation, as reported in our news pages. There are 2,000,000 men still to return from Europe and 1,750,000 from the Pacific—but the heretofore-announced peak for railroad movement of 500,000 in a month is not expected to be exceeded, because returning troops take only two or three train rides instead of the six or seven of the "redeployed."

●

TRUMAN LEANS LEFT; President Truman has gone over completely to the side of the "purchasing power" theorists who, while praising "private enterprise," know very well that government participation in financing and owning productive property, which they advocate, puts private business in a subordinate and declining role compared to bureaucratic politics. Our leading editorial analyzes this distressing victory of disingenuous double-talk, and observes that President Truman is not its only victim; many political and business leaders with more experience than he have been similarly taken in by a group of clever dissemblers. If political and business leaders—there are a few—who understand the mechanics by which economic and political freedom are maintained do not soon shake off their inexplicable timidity, the opportunity for effective opposition will have gone by.

●

COUNSELOR OF "SPENDING": The originator of this government-spending-for-full-employment patter was Lord Keynes. It is ironical that, right now, this man, alleged to be such an authority on how to make a nation prosperous, should be here in his country's behalf in quest of further billions of alms from people whose past practices in acquiring the means to extend charity are so poorly esteemed by his lordship. If putting the economy under the thumb of the political power were actually the road to wealth, as Keynes has taught, then he wouldn't be holding out his hat here, but in Russia or Spain or some other nation which has come closer to obeying his prescription than, so far, this country has done. Seems as though a people who want prosperity as much as Americans do would take a look at their own attainments, compared to those of the rest of the world, and then try to maintain and strengthen the practices that have given them so much greater wealth than any other people. Judged by accomplishments at home, Europeans' competence to offer any useful advice on how to attain prosperity may be subject to reasonable doubt.

●

SOAK THE TAXPAYERS: With a $300 billion federal debt facing the taxpayers, President Truman has lightheartedly asked them to take on an added burden of a few sundry more billions to pay the transportation bills of people who don't want to pay such bills for themselves. That is to say, he has asked Congress to take $3 billion more away from the taxpayers to streamline the highway system; with a further handout of indefinite total to build 3000 airports; plus nobody knows how many billions for scattering super-T. V. A.'s all over the country; and even a paltry $25,000,000 to build a highway for Central America. Being in a branch of transportation which has to finance itself by private capital, and by compensatory charges on users, isn't any sinecure these days.

●

DO STREAMLINERS PAY?: A revenue study, by the engineering firm of Coverdale & Colpitts, of the Seaboard's "Silver Meteor" is reviewed in an article in this issue. A 7-car train grossed $2.83 per mile in the first half of 1939. Three 7-car trains averaged a gross of $2.73 per mile each in the twelve months ended June, 1940. Three 14-car trains averaged $3.30 per mile each in the twelve months ended June, 1941. Since the war began, of course, the per-mile earnings of these trains have really mounted. Operating expenses have increased, too.

TRACK OUTLOOK: Our engineering editors have asked 14 engineering and maintenance officers whether they believe considerably higher track standards are to be looked for in the coming years, and whether they are making plans to that end on their own properties—and an article in this issue summarizes the replies of these officers. Their answer, in a word, is: Yes. However, it isn't just because of higher speeds that the engineers expect to have to provide better track; they also look forward to the development as desirable from a standpoint of maintenance expense. Radical innovations are not foreseen—the improvement will come from strengthening existing elements; and, of course, greater mechanization is called for—along with better supervision and more care in the selection and training of employees.

●

CLASS RATES & THE SOUTH: Columnist John Temple Graves in the Birmingham Age-Herald has called attento a contention originating in Chicago to the effect that the I. C. C. class rates decision may injure the Southern manufacturing industry more than help it. More freight moves on class rates into the South than out of it, and, as a result, lower class rates should stimulate the movement of such freight into rather than out of the South—so runs this argument. Maybe those who have invoked political emotions to resolve an economic question will wish they hadn't, before the chain of events they have initiated completes its course.

●

1860 TRANSPORT POLICY: From an old document—a message in 1860 by the governor of New York to the state legislature on the finances of the state-owned Erie Canal—an editorial in this issue reveals the ideas of that day as to what was just and fair in the financing of "public works." For one thing, the New York governor was so anxious to prevent the canal from becoming a charge on general taxation that he sought to tax traffic which had deserted the canal for the rails, to spare the general taxpayer. What a contrast with the present, when waterways are proliferated everywhere with general taxes paying the whole bill and actual users paying not a cent!

●

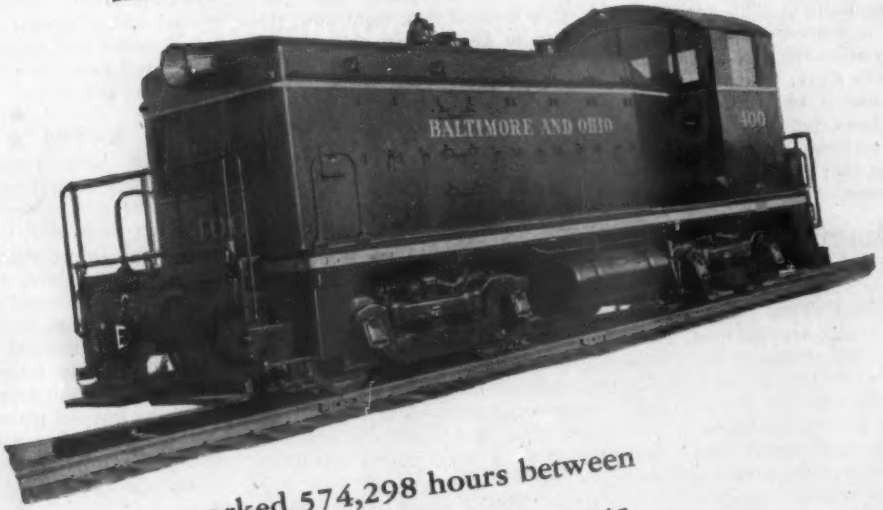
N. P.'s EARNING ASSETS: The financial structure of the Northern Pacific is reviewed in an article in this issue, with attention drawn to the unusual degree in which it receives revenues from sources other than its railroad operations. The Northern Pacific is strongly on the credit side in its equipment and facility rentals, and its stock holdings in the Burlington and land ownership add to its non-operating income. The company has no early maturities of funded debt in important amount.

●

LOCOMOTIVE FOR EUROPE: The British locomotive manufacturers got together over a year and a half ago and, with the aid of continental engineers, designed a standard 2-8-0 locomotive, described herein, suited to economical operation practically anywhere on the Continent.

IT'S A GREAT NEW DAY FOR RAILROADING

16 Baltimore & Ohio
General Motors Diesel switchers
like this:



worked 574,298 hours between
August 1940 and January 1945
with an average availability of 96.5%.
Each switcher averaged 700 hours
a month with an average of 26 hours
off for maintenance and repairs.

Think of utility and economy of
performance like this!

ADD SECURITY TO VICTORY
BUY MORE VICTORY BONDS

GENERAL MOTORS
LOCOMOTIVES

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS CORPORATION • LA GRANGE, ILL.

RAILWAY AGE

President Truman Goes New Deal

The significance of President Truman's recent message to Congress is unmistakable. He professes to believe that the nation should rely on free private enterprise for its economic progress and prosperity. But he accepts the economic theories of the New Dealers, and advocates the passage by Congress of important legislation based upon these theories which would prevent the successful functioning of private enterprise, and lead directly toward national socialism. The issue of free private enterprise versus national socialism, involving the future of the railroads and every other industry, is more squarely presented to the American people than ever. It is to be hoped that those who favor private enterprise will not continue to be left, as they have been for twelve years, with much less skillful and courageous political leadership than those promoting national socialism.

Undermining the Moral Code

The widespread acceptance since inception of the New Deal of its correlated "full employment," "purchasing power" and government spending theories threatens to undermine the nation's economic system. Nobody, as far as we know, has heretofore emphasized that it threatens to do this largely by undermining our formerly accepted code of morals. These theories assert that it is the "duty" of private business and government (i.e., the taxpayers) to (1) furnish jobs for all who seek them and (2) afford them enough income to provide them with adequate purchasing power. Sometimes "purchasing power" as used in this connection means sufficient aggregate income for all who are employed to enable them to buy enough goods and services to cause general prosperity. Sometimes it means enough income for each family to enable it to maintain a "decent standard of living." And it is proposed that if a family does not earn enough income to provide it with sufficient purchasing power to maintain a "decent standard of living" it shall be subsidized by such means as providing it with government housing largely at the expense of the taxpayers.

An important question ignored by these theories is: What is to be the duty of those for whom jobs and purchasing power are to be provided? This obviously is a moral as well as an economic question. Laziness and thriftlessness heretofore have been considered vices, and it has been assumed that they have been the reasons why many families have had low incomes. Are we going to adopt by legislation a new code of morals to encourage laziness and thriftlessness by assuming that they are equal in virtue to industry and thrift, and that the industrious and thrifty have a duty to help support the lazy and thriftless in order to provide them and the nation with adequate purchasing power? Or is it to be assumed that it is to be the duty of all who are employed to do work of value equal to the wages they are paid? And who is to decide what the work of those who are employed is worth?

Can't Pay People More Than They're Worth

Private enterprise is not and cannot be made a single agency for employing all who will work at wages sufficient to provide them with any given aggregate amount of purchasing power. Private enterprise consists of many thousands of entirely separate concerns, large and small, which often make losses, but each of which is conducted to make profits. No private employer could stay in business long if he paid wages exceeding the value *to him* of the work he got done for them. Hence, no person can keep himself employed long by private business unless he does work believed by his employer to equal in value the wages paid for it.

Suppose that in consequence many cannot keep themselves employed by private business, or can keep themselves employed by it only at wages too low to provide them with "adequate purchasing power." The New Deal theory is that in that case government should so employ or subsidize them as to provide them with adequate purchasing power. But government can get money for employing or subsidizing some people only by largely or wholly taking it in taxes from other people. When it takes money from some people and pays or gives it to others it does not increase total national purchasing power. It simply reduces the purchasing power of those from whom the money is taken *more* than it increases the purchasing power of those it employs or subsidizes, because it has to take out of the money the cost of collecting and disbursing it.

Profits Also Are "Purchasing Power"

Total national purchasing power can be increased only by increasing the total production of goods and services needed or desired by the people. And total production can be adequately increased only if all who are employed, whether by private business or the taxpayers, do

work equal in value to what they are paid for doing it.

The principal reason why the "full employment," "purchasing power" and government spending theories of the New Dealers are so wholly fallacious and dangerous is that they assume that the purchasing power of wage earners and other buyers of consumer goods constitute the total purchasing power of the nation. The total national purchasing power required to cause high employment and the payment of high wages includes the power of business to purchase huge quantities of durable goods; and this purchasing power of business depends on its net earnings. The railroads, for example, now contribute to national purchasing power by paying their employees almost $4 billion a year in wages. But they also now contribute to national purchasing power by spending about $⅓ billion a year for durable goods—i.e., equipment and materials. Their purchases of equipment and materials should be increased for a period of years to at least $1½ billion annually. But unbroken experience shows that normally the volume of their purchases of equipment and materials is determined by the amount of their net earnings. Hence, to maintain or increase their purchasing power and purchases it is necessary to maintain or increase their net earnings. It follows that if an advance in the wages of their employees reduces their net earnings, the effect is to reduce the purchasing power and purchases of the railways, and thereby reduce the employing and purchasing power of the manufacturers from whom the railways buy. Complete acceptance in legislation of the New Deal's theories would largely destroy the power of every industry in the country to buy durable goods.

T. N. T. Packaged as Confectionery

Those who favor national socialism know that by trying to incorporate their "full employment," "purchasing power" and government spending theories in legislation, they are trying to destroy private enterprise. Unfortunately, most of the public men and many of the business men who partially or wholly accept these theories are so ignorant of economics or so anxious to further their own selfish interests that they join in promoting legislation tending toward national socialism without really knowing what they are doing. There is dire need for a nation-wide campaign to educate the public regarding the dangers to its future prosperity with which it is being confronted by the efforts to incorporate the New Deal's economic theories in legislation.

Transportation Policy, Pre-Civil-War Vintage

Curious people, our pre-Civil-War forbears. When New York State built the old Erie Canal, it actually required the *users* of the canal to pay a remunerative toll for the privilege; and, in its early years, the canal was a profitable enterprise, judged by customary business standards. Not only that, but when competing railroads came along, the state at first permitted them to carry freight only when the canal was frozen over, and later levied a ton-mile tax or "toll" on their traffic—over and above all other taxation—to reimburse itself for the tolls it lost when traffic shifted from the canal to the rails.

In 1851 the tolls on railroad traffic for the benefit of the competing canal were removed, as in that year the canal was enlarged and the state authorities believed it would be able to hold its traffic without penalizing the competing railroads. This conviction proved, however, to be in error. Canal tolls declined from $3,704,000 in 1851 to $1,812,000 in 1859—although canal tonnage was about the same in both years, the decline being accounted for by the loss of traffic yielding higher tolls.

Traffic Expected to Pay Its Way

Accordingly, in 1860, Governor Morgan addressed a message to the legislature, urging it to restore the penalty tolls on railroad traffic. The reasons given for this recommendation by Governor Morgan are interesting and curious in the light of the present-day attitude toward similar "public works." The state required a revenue of $3,500,000 a year from the canal to pay maintenance expenses and interest and sinking fund charges on the canal debt, plus a payment of $200,000 *"for the support of government."* What a quaint notion—that a government business enterprise should actually pay something toward the support of government, as private enterprise is required to do!

Governor Morgan pointed out in his message that, with tolls falling below $3,500,000 because of railroad competition, a part of the carrying cost of the canal was having to be paid from general taxation, and to this he strongly objected. Such general taxation, he said, "is the only resort to provide means for the support of government, for the schools, the charities . . .," and he believed that the taxpayer would pay his taxes cheerfully only if "he feels that he is not taxed to pay interest on the canal debt till every effort has been made to procure the required amount from the canals themselves" (or, he might in candor have added, from the canal's competitors).

The difference between government transportation policy then and now is significant. Government owned the canal. Therefore, it levied "tolls" in addition to ordinary taxes on the new and more efficient railroads owned by private capital to prevent them from taking the canal's business. The railroads are still owned by private capital and are still more efficient, not only than government-owned inland waterways, but than new means of transportation using government-owned highways and airports. Therefore, government now hamstrings railway competition with other carriers, not by making the railways pay "tolls," but by refraining from making carriers using government property pay them. Which helps reveal why competitive private capitalism is the only economic system consistent with rapid technological progress. What must be really incomprehensible to a modern audience, however, is Governor Morgan's museum-piece policy of insisting that state-owned transportation be a charge on traffic and not on general taxation; and, furthermore, that a state business enterprise should yield something toward general governmental expenses.

As the Erie Canal lost more and more traffic to a

more economical rival, tolls were finally entirely abandoned; and, when that step still didn't put the traffic back on the canal, the state proceeded to pour good money after bad by spending a couple of hundred millions more on canal development—entirely at the expense of general taxation, the politicians who succeeded Governor Morgan not having such acute ethical perception in this regard as he had.

There may be some who will judge Governor Morgan a little unfair to the railroads, to tax them for the purpose of keeping a less economical rival in operation—but let those who would pluck a mote from his eye take a look, first, at the modern means of financing rivalry to the railroads. The expense of New York State's barge canal today is borne entirely by the general taxpayers, at the top of the list of whom stand the railroads. Similarly with a large part of the costs of waterway and air transportation—to these also, as general taxpayers, the railroads are high-ranking contributors. The more things change, the more they remain the same, as the French say; and a socialist enterprise always loads the dice against a private competitor.

Human Side of Engineering

Periodically over the years, and without any coaching on our part, spirited discussions have taken place among our readers, in our columns, on the opportunities for college graduates in railway service. Usually the controversy finally settles down and centers around a consideration of the use of college graduates in the technical department—engineering and mechanical. Always, and quite naturally, these discussions are concerned largely with the prospects for promotion of the young engineer who enters railroad service upon graduation from college.

Certain significant trends that have been developing in the field of engineering education may throw some light on why the college graduate in the technical departments has not advanced as rapidly as he would like, or has not been more successful in competing with non-college men for higher positions in the railroad organization.

A group of leading engineering educators, acting as a committee of the Society for the Promotion of Engineering Education, has in recent years made a critical study and analysis of engineering education. For one thing, it found that in general too little attention was being paid to what it designated as humanistic-social studies, and more recently it has suggested that a minimum of 20 per cent of the students' educational time should be devoted to such studies. These include English, history, economics, public speaking, psychology, citizenship, and others, all of which tend to give the student a broader perspective and equip him better to understand and deal with his fellows and to qualify for executive or administrative position. They may prove an important factor, also, in enhancing his professional status in business and in the community.

More and more attention is being given to this broader phase of engineering education, although it has not been an easy task to persuade engineering educators that this should be done at the expense of some of the more highly technical studies. Unfortunately, too many engineering graduates—and this is true of other graduates of professional schools—fail to recognize the fact that their profession suffers if they bury themselves in technicalities and fail to improve their ability to deal with the human element, whether in business or in the communities in which they live. Fortunately, more and more of our engineering colleges are recognizing this shortcoming, and the effect is noticeable in the type of graduates that they are turning out.

Those Dirty Windows

The "Astra Liner" has been announced to take its place among the streamlined passenger trains of the future. Among its innovations, the Astra Dome is outstanding, and is certain to have wide appeal for those who travel to see scenery, or whose appreciation of scenery affords welcome diversion during necessary travel—if, as the announcement points out, passengers will be afforded an unobstructed view through 360 deg. from a high vantage point.

There is no question that, through the design features incorporated in the new type of equipment, passengers will be surrounded by glass on all sides and that they will be located at a high vantage point, but it is not so certain that they will have an unimpeded view in any direction unless the railroads that plan to operate such equipment gain a new concept of the need for clean windows, which goes far beyond common practice in the past. It is noteworthy that the glass to be used in the dome of the Astra Liner will have light-diffusing, heat-absorbing, fog-preventing and safety features. All that appears to be lacking is the equally important matter of maintaining perpetual cleanliness, which, until solved by science or other means, might well offset all of the other advantages of the glass, if not those of the Astra Dome itself.

If to call attention to this matter at this juncture is borrowing trouble before the first new car is built, it is borrowing it on the indisputable evidence that most railroads have never been "clean-window conscious"—that the condition of car windows en route on many trains, particularly under steam operation in tunnel territory, has been a source of annoyance to passengers and a discredit to the service advertised. Maybe they were able to show this indifference to passenger comfort and well-being in the past, but dwindling passenger traffic since the early 'Twenties, except for the war period, and the chorus of complaints that has increased in volume up to and throughout the war, would belie the belief that they ever dared overlook any means to passenger good will. It is a certainty that the railroads cannot be indifferent toward passengers in the future if they want to hold their patronage, which means that they will have to revolutionize their thinking about the "little matter" of dirty car windows.

Fortunately, the means are at hand to keep car windows clean—in fact, to wash the entire exteriors of cars, in trains, without uncoupling the cars. This is in the form of mechanical washers with revolving brushes and washing and rinsing sprays, which do a remarkably good job at low cost and with practically

no hand labor. However, few of these installations have been made, and they have been at terminals, primarily for washing the entire car.

Perhaps the solution of the problem lies in the installation of modified car washers along the line, at points where windows are most likely to be smudged, and where the restricted speed of operation necessary will have the least effect on train schedules. One road has had at least two such "en route" window washers in service for several years, with good results, and a highly favorable reaction from its patrons. The dirty car window must be recognized as a problem in the streamliner era ahead, and something effective done about it.

The British Were Ready

Early in 1944 the locomotive manufacturers of Great Britain were asked by the Ministry of Supply to prepare preliminary designs for a locomotive more powerful than the war-built "Austerity" type and suitable for universal use on the railways of continental Europe. Late in 1944 the final design of a 2-8-0 type, called the "Liberation," was completed and manufacturing drawings prepared. The designers had the advice and cooperation of railway representatives from France, Belgium, Holland, Czechoslovakia, Poland, Yugoslavia and Greece in their work. The British are ready—were ready before V-E day—to supply to a commercial market a product designed for that market. To the best of our knowledge the same thing is not true in this country among American builders of steam locomotives.

It would be interesting to know what, if any, encouragement was offered by our War Production Board (which corresponded roughly during the war with the British Ministry of Supply), by our Department of Commerce, by our other agencies of government which control or regulate, to builders in the United States to prepare, during the most active and critical months of the war, for the coming peace-time competition for markets. With the type of thinking generally prevalent in Washington it seems fair to assume that no such encouragement was offered; it is even less likely that such an idea originated there and was passed on to our manufacturers.

American-built locomotives by the thousands, as well as many from British and Canadian plants, were shipped into the war zones for military use. They were locomotives built to do a job, not especially designed to meet operating conditions or to satisfy normal peace-time traffic requirements. They were good locomotives for the purpose and many of them probably must still be used during the early years of peace in the liberated or conquered countries because of a lack of availability of other power. But other power will, nevertheless, be desired; the British are prepared to furnish it, prepared to furnish it according to studied design specifications, prepared because their government reversed the well-known maxim and in time of war prepared for peace. Call Great Britain, as Napoleon did, a nation of shopkeepers but no one can deny that commercially they are a nation of realists. Export markets for the sale of American locomotives may well reflect that fact in these coming years.

Less Than a Point a Meal

When the luxurious appointments, excellent food and deft service of pre-war dining cars are considered, a most invidious comparison can be made with present dining car service. But it should not be overlooked that the problems of the dining car departments probably have been relatively more difficult during the war than those of any other railway department. Under what has perhaps been a necessary allotment of ration points, the difficulties of securing food for railway patrons have been extremely onerous, and on most railroads less than one red point a meal has been available for dining cars. There have also not been nearly enough dining cars to go around. There have not been means of getting more, and they have had to be spread thinly.

In addition, railway dining car employees have had no exemption whatever from military service, and the inroads of selective service and war plants have been great. And it became virtually impossible to apply discipline. In one case a dining car steward discharged by one railway for closing the diner two hours before the appointed time left the city the same afternoon as a steward on another railway. Instances of this character were multiplied to the extreme detriment of service. There was also more than one case of whole groups of dining car employees being involved in peculations of one sort or another.

Despite all of this, the war-time traveling public did get fed, and in this country the railways did not have to resort to the complete abolition of dining car service as was the case in all other nations actively engaged in the war. It appears that food rationing will continue for a time but it has been alleviated. More than one railway has already established schools for stewards, cooks and waiters and is stressing courteous service; and on one of these railways the results were quite noticeable immediately after the surrender of Japan.

Railway dining car service is a necessary part of overall passenger service and its importance as a means of pleasing and "selling" the passenger cannot be overestimated. In view of the nature of the job, and also of the fact that most dining car superintendents are in charge of the entire commissary, which includes the feeding of thousands of employees as well as passengers, it is perhaps necessary to continue the present practice of having superintendents of dining cars report to operating officers. But the desirability of the passenger traffic department having close touch and some authority over dining car service is worth considering. The tendency during the war has been to let dining car service get entirely out of the hands of passenger department officers. For post-war needs this tendency should be checked.

Index to Volume 118

The indexes to the latest volume of the *Railway Age*, January to June, 1945, are now ready for distribution and copies may be had by those subscribers desiring them. Requests should be addressed to the Circulation Department, *Railway Age*, 30 Church Street, New York 7, N. Y. Subscribers who have in previous years made application for the index need not apply again; they will receive it as long as they continue to subscribe.

The Silver Meteors—a Revenue Study

One seven-car train in 1939; now six trains—Growth of revenues and net income are tabulated by twelve months' periods

IN 1938 the Seaboard Air Line placed an order with the Edward G. Budd Manufacturing Company for one fast de luxe all-coach train of seven cars with 280 revenue seats, featuring speed and comfort at moderate cost, with which to inaugurate the first eastern seaboard streamline train service.

The train's name, "Silver Meteor," was chosen in a public contest that attracted over 79,000 entries, suggesting 23,000 names. The winning name was proposed by 22 individuals.

Publicity that culminated in a full page advertisement in the metropolitan newspapers on the first day tickets for the train were on sale brought within 48 hours 2,300 applications for seats, which "sold out" the train for a considerable period beyond its maiden trip.

The train's inaugural run was made on February 2, 1939. It was placed in fast over-night service between New York and Florida, making a round trip every third day, alternating between New York and Miami, Fla., and between New York and St. Petersburg, Fla. In June, 1939, by dividing the southbound and consolidating the northbound, train at Wildwood, Fla., the operation was expanded so as to provide a service to Miami and St. Petersburg every third day instead of every sixth day.

While originally there was uncertainty as to the amount of traffic available during the summer months, the results of operations soon demonstrated that the seven-car train was inadequate to meet the demand for space, and the service has since been very greatly extended, as will be shown in detail later.

The experience with the first seven-car train had been so competely satisfactory that, to protect the increasing demand for reservations, the Seaboard management authorized the purchase from the Budd Company of two new trains to increase the service to seven-car daily trains. This purchase was supplemented later by a sufficient number of Budd-built cars to install a daily 14-car train.

The daily seven-car service of the Silver Meteors was instituted on December 1, 1939. Between that date and November 30, 1940, they consisted of three seven-car trains, which were enlarged to 11 cars every third day between December 1, 1939, and May 27, 1940. Between December 1, 1940, and April 27, 1941, the trains were expanded to 14 cars daily.

Silver Meteors of 14 cars were run between New York and Wildwood, Fla., at which junction point the southbound train was divided and the northbound train consolidated, one section of eight cars making the run between Wildwood and Miami and the other section between Wildwood and St. Petersburg.

The cars of the Silver Meteors are of stainless steel, air-conditioned throughout, with comfortable reclining seats, pleasing lighting effects, distinctive dec-

* This article is extracted from a Report on Streamline, Lightweight, High-Speed Passenger Trains of the Seaboard Air Line made by Coverdale & Colpitts, consulting engineers, 120 Wall street, New York. The report is dated March 31, 1945.

Revenues and Expenses of the Silver Meteors of the Seaboard

Item	One train (7 passenger-train cars)—One round trip every three days 4 mos. 27 days ended June 30, 1939		Three trains (7 passenger-train cars each)—Each one way daily Year ended June 30, 1940		Three trains (14 passenger-train cars each)—Each one way daily Year ended June 30, 1941		Three trains (16 passenger-train cars each)—Each one way daily Year ended June 30, 1942		Three trains (16 passenger-train Cars)—Each one way daily Year ended June 30, 1943	
	Amount	Per train-mile	Amount	Per train-mile	Amount	Per train-mile	Amount	Per train-mile	Amount	Per train-mile
Revenues:										
Passenger revenue—in coaches	$280,799	$2.785	$1,615,242	$2.725	$2,687,418	....	$3,446,462	....	$5,024,981	....
Passenger revenue—in Pullman cars	....	....	....	....	129,582	....	932,464	....	1,746,235	....
Total passenger revenue	....	....	....	....	2,817,000	$3.241	4,778,926	$5.040	6,771,216	$7.304
Pullman contract revenue	....	....	....	....	14,915	....	89,283	....	261,317	....
Total revenues	280,799	2.825	1,615,242	2.725	2,831,915	3.298	4,468,009	5.143	7,032,533	7.586
Train Expenses:										
Wages of crews	36,238	.359	204,538	.345	304,148	.350	366,017	.421	437,851	.472
Fuel	5,922	.059	49,598	.084	86,993	.100	166,440	.192	245,991	.265
Lubricants	1,427	.014	7,789	.013	15,090	.017	29,726	.034	38,892	.042
Train supplies and expenses	10,047	.100	31,772	.054	62,038	.271	97,370	.112	124,016	.134
Power plant maintenance[1]	4,903	.049	73,264	.123	165,778	.191	249,857	.288	319,756	.345
Train maintenance[1]	9,955	.099	39,513	.067	110,695	.127	228,199	.263	241,493	.261
Other expenses[2]	11,420	.113	113,288	.191	208,835	.241	329,654	.379	367,262	.396
Total train expenses	79,912	.793	519,762	.877	953,577	1.097	1,467,263	1.689	1,775,261	1.915
Dining-buffet, net gain or loss	−758	−.007	2,223	.004	−10,130	−.012	−34,861	−.040	−39,526	−.043
Total, including dining buffet gain or loss	80,670	.800	517,539	.873	963,707	1.109	1,502,124	1.729	1,814,787	1.958
Net revenue	200,129	1.985	1,097,703	1,852	1,868,208	2.149	2,965,885	3.414	5,217,746	5.628
Per cent of revenues	71.3	....	67.9	....	66.4	....	66.4	....	74.2	....
Route-miles between—										
Richmond and Miami	1,051		1,051		1,051		1,051		1,051	
Richmond and St. Petersburg	911		911		911		911		911	
Train-miles	100,811		592,852		869,262		868,700		926,992	
Passenger-miles (estimated)	20,126,000		113,749,437		194,033,285		272,892,201		380,780,931	

[1] Does not include estimated amounts accumulated, in excess of actual expenditures, for general overhaul of power plant and passenger-train cars.
[2] Advertising expenses not included.
NOTE: These column headings indicate the prevailing consists of the trains during the yearly periods. For variations from these consists and changes in method of operation within the periods, see the text of the article.

orations, ample lounge accommodations and toilet facilities, and ride smoothly at high speed.

Sleeping Cars Added

In order to meet the growing demand for sleeping-car accommodations to Florida and at the same time avoid the operation of additional trains, it was deemed desirable to add sleeping cars to the Silver Meteors. Accordingly, between April 28, 1941, and May 22, 1943, the train carried from 10 to 13 lightweight cars and from 3 to 4 standard sleeping cars between New York, Miami and St. Petersburg, with the exception that, beginning December 6, 1942, 13 standard type coaches and sleeping cars of the Advance Silver Meteor between New York and Miami were attached to the regular Silver Meteor between Wildwood and Miami, making between these points a train of 20 cars to December 26, 1942, and 19 cars between December 27, 1942, and May 22, 1943.

The Advance Silver Meteor was withdrawn on May 22, 1943, and on the following day separate sections of the Silver Meteor were installed to run between New York and Miami and between New York and St. Petersburg. Up to and including March 31, 1945, the concluding date of the earnings statements for the Silver Meteors in this report, the Miami section was composed of seven lightweight cars, and from six to ten standard type cars, including diners, coaches and sleepers—the St. Petersburg section carrying seven lightweight cars, one standard coach and four standard sleeping cars.

In the period following the installation of the Silver Meteors and before passenger traffic on all lines had registered a substantial increase as a result of the war effort, the earnings of the Seaboard's through passenger trains of standard equipment between New York and Florida were not adversely affected by the popularity of the new streamline trains. On the contrary, the publicity gained through the introduction of the Silver Meteors appears to have increased the prestige of the Seaboard's other passenger trains and the service as a whole. Commencing in 1941, however, the demand for space on all through trains has been so great as to make comparisons of this nature between them of little value.

Seaboard War Passenger Traffic

The preparation for national defense and later for war, insofar as it appreciably affected railroad traffic, may be said to have begun actively late in 1940. While railroad traffic expanded slightly in the latter part of 1940 incident to the transportation of trainees and of materials for the construction of training camps, the very large increases in war traffic, both freight and passenger, first appeared in 1941, and since then American railroads have shattered all previous transportation records.

In common with that of all other railroads of the country, the traffic of the Seaboard moved upward with the growth of the war effort. Along its lines many training camps and other war establishments of various kinds were built, which since 1940, have been a large source of passenger traffic. Compared with the year ended June 30, 1939, the Seaboard's revenue passenger miles increased 82 per cent and 636 per cent in the years ended June 30, 1941, and 1944, respectively. This greatly enlarged passenger traffic was handled with an increase in the passenger-train miles of only 6 per cent and 32 per cent, respectively.

The pre-war action of the management in purchasing new passenger cars and motive power was largely instrumental in making possible this remarkable achievement.

In anticipation of future passenger-train car requirements, the Seaboard and associated railways have recently placed orders with the Budd Company for 48 streamline, lightweight cars, to be built as soon as labor and materials are available.

Between New York and Washington the Silver Meteors are hauled by electric locomotives of the Pennsylvania.

Between Washington and Richmond, Va., 116 miles, Diesel-electric locomotives of the Seaboard were used until September 30, 1942, when steam locomotives of the Richmond, Fredericksburg & Potomac were substituted.

Between Richmond and Wildwood the number of 2,000-hp. Diesel-electric locomotive units per train has varied from one unit for the early seven-car train to three units for the 17-car trains composed of lightweight equipment and standard type sleeping cars.

Air Line Between Richmond—Miami and St. Petersburg

Miami Section Three trains (17 passenger-train cars each)— Each one way daily Year ended June 30, 1944		St. Petersburg Section Three trains (12 passenger-train cars each)— Each one way daily Year ended June 30, 1944		Total Miami and St. Petersburg Sections Six trains (29 passenger-train Cars)— Each one way daily Year ended June 30, 1944		Miami Section Three trains (17 passenger-train cars each)— Each one way daily 9 months ended March 31, 1945		St. Petersburg Section Three trains (12 passenger-train cars each)— Each one way daily 9 months ended March 31, 1945		Total Miami and St. Petersburg Sections Six trains (29 passenger-train Cars)— Each one way daily 9 months ended March 31, 1945	
Amount	Per train-mile	Amount	Per train-mile	Amount	Per train-mile	Amount	Per train-mile	Amount	Per train-mile	Amount	Per train-mile
$4,132,767	....	$3,189,451	....	$7,322,218	....	$3,237,183	....	$2,395,266	....	$5,632,449	....
2,240,557	....	1,228,536	....	3,469,093	....	1,917,353	....	919,290	....	2,836,643	....
6,373,324	$8,284	4,417.987	$6,662	10,791,311	$7,533	5,154,536	$8.991	3,314,556	$6.640	8,469,092	$7.897
250,984	....	107,036	....	358,020	....	208,831	....	89,452	....	297,483	....
6,624,308	8.610	4,525,023	6.823	11,149,331	7.783	5,362,567	9.354	3,404,008	6.819	8,766,575	8.174
326,115	.437	297,302	.448	633,517	.442	266,097	.464	228,634	.458	494,731	.461
212,918	.277	157,794	.238	370,712	.259	197,643	.345	124,459	.249	322,102	.300
32,032	.042	19,978	.030	52,010	.037	29,906	.052	15,727	.032	46,633	.043
170,388	.221	119,375	.180	289,763	.202	146,188	.255	89,847	.180	236,035	.220
381,158	.495	239,781	.362	620,939	.433	454,360	.793	229,698	.460	684,218	.638
225,521	.293	153,728	.232	379,249	.265	222,665	.388	146,450	.293	369,115	.344
350,009	.455	258,478	.390	608,487	.425	265,998	.464	219,498	.440	485,496	.453
1,708,241	2.220	1,246,436	1.880	2,954,677	2.063	1,583,057	2.791	1,054,273	2.112	2,637,330	2.459
−75,516	−.098	−30,835	−.046	− 106,351	−.074	−21,301	−.037	−13,150	−.026	−34,451	−.032
1,783,757	2.318	1,277,271	1.926	3,061,028	2.137	1,604,358	2.798	1,067,423	2.138	2,671,781	2.491
4,840,551	6.292	3,247,752	4.897	8,088,303	5.646	3,758,209	6.556	2,336,585	4.681	6,094,794	5.683
73.1	....	71.8	....	72.5	....	70.1	....	68.6	....	69.5	....
1,051		906		1,051 906		1,046		911		1,046 911	
769,332		663,192		1,432,524		573,288		499,148		1,072,436	
769,332		242,807,199		579,809,477		272,728,979		184,185,773		456,914,752	

When the southbound Silver Meteors were divided at Wildwood, one section going to Miami and the other section to St. Petersburg, and multiple Diesel-electric units were employed, one of the units not required south of Wildwood was cut out of the train at that junction and turned back on the same day on the northbound Silver Meteor.

Between Wildwood and Miami the number of power units per train has varied from one to three Diesel-electric locomotives, except that four units were employed for a short period when the Advance Silver Meteor was consolidated with the Silver Meteor making a train of 19 to 20 lightweight and standard-type cars.

From June 5, 1939, to May 27, 1940, a Diesel-electric locomotive provided the motive power for the trains between Wildwood and St. Petersburg. Other than this they have been hauled by a steam locomotive.

Upon the installation in 1943 of a West Coast Silver Meteor, two 2,000-hp. Diesel-electric locomotives were used between Richmond and Jacksonville and one steam locomotive between Jacksonville and St. Petersburg.

The Table Explained

In the preparation of our first report covering the operations of the streamline trains of a group of railways we set up a form for displaying revenues and expenses to which all of the lines could adapt their statistics. As subsequent reports were made the same form was used for the sake of uniformity in making comparisons from year to year. For various reasons the expenses did not include many items that properly attach to the service. Depreciation, for example, is a definite expense, but the views of railroad officers have differed widely as to the proper rate chargeable against the new type trains. Interest on cost is an even more definite expense, but, as in the case of depreciation, no uniform rate could be applied because the interest rates on equipment trusts of the purchasing lines differed depending upon their credit position and the times of issue.

Again both depreciation and interest are related to cost and in many instances cost figures were not available to us, and neither item is affected by the volume of traffic or the direct expenses of operation. These items were therefore omitted with the knowledge that each line would apply its own depreciation and interest rates in any comparisons it desired to make.

In the early days of streamline train operations the traffic they carried was a small proportion of the total of the line and the added cost for track maintenance, general expense, taxes, etc., was of such relative inconsequence as not to justify the attempt to measure it. Now, however, streamline train operations are much more extensive, and constitute a much larger proportion of the total passenger train-mileage than in the earlier period, especially on the Seaboard, and these omitted expense items, therefore, more particularly federal and other taxes, are important in any determination of final net profits and should properly be included. But to undertake to make a separation of system items of this nature between passenger and freight traffic on the basis of some formula, such as that of the Interstate Commerce Commission, and further to divide the passenger traffic expenses between those assessable against streamline train operations and those of standard equipment, in this time of man-power shortage, would place an unwarranted burden on the accounting department of the railroad.

We do not in the least doubt the reality of these expenses, but we do doubt if their ascertainment would add greatly to the value of the information contained in this report. For these reasons and for the sake of uniformity in enabling the reader to make yearly comparisons of the different items, we have adhered to the form used in our previous reports in the preparation of the earnings statements which follow.

In comparing the net revenue of the Silver Meteors, as shown in the following statements, with the standard accounting figure of gross income (in this case the net income of the Seaboard system available for interest and other corporate purposes), it should be emphasized, therefore, that the former is calculated on a basis which includes the out-of-pocket costs and those directly allocable to the operation of these trains and does not account for such items as taxes, depreciation, track maintenance, general expense, etc., as does the system gross income. On the other hand, neither the net revenue of the Silver Meteors nor the system gross income takes into account the item of interest. In other words, the figures of net revenue in our statements and of gross income in the receivers' accounts are not comparable.

While the Silver Meteors are through New York-Florida trains—the passenger revenues shown in the statement are those only of the Seaboard Air Lines; that is, they do not include the passenger earnings of these trains on the lines north of Richmond.

Supporting Assets Aid Northern Pacific

Sustained in part by substantial regularly recurring income from sources other than its railway operations, company has never defaulted on principal or interest on its funded debt

ONE of the principal supporting assets of the Northern Pacific is that, as it was the first railroad constructed to the north Pacific coast, it is a lessor line to a much greater extent than other railroads in the territory. The company owns the only lines between Portland, Ore., on the Columbia river, and the Puget Sound ports of Tacoma and Seattle, Wash. These lines are used jointly with the Union Pacific between Portland and Tacoma and with the Great Northern between Portland and Seattle under 999-year trackage contracts running from 1909, from which substantial annual rentals are received, averaging $1,342,878 annually for years 1940-1944, inclusive. In addition, the U. P. and G. N. pay a use proportion of the operating expenses.

The Chicago, Milwaukee, St. Paul & Pacific is a joint user of the line between St. Paul and the "Head-of-the-Lakes" cities of Duluth, Minn., and Superior, Wis., under a 99-year contract from October 1, 1900, under which annual rents received (in addition to a use proportion of operating expenses) averaged $354,761 during 1940-1944, inclusive. The Great Northern and the Burlington are joint users of the terminals at Billings and Laurel, Mont., and of the railroad between those points, under contracts which are now being extended for a period of 25 years from September 1, 1945, and indefinitely thereafter, for an average rental of approximately $225,000 a year instead of about $325,000 as at present. Other portions of the company's lines are jointly used by other railroads under various contracts from which the company received an average of $1,257,902 annually during 1940-1944.

The company is a joint user of lines of other railroads for which it pays about $950,000 yearly. The aggregate average net joint facility rents of the Northern Pacific for the years 1942 to 1944, inclusive, were $2,444,494 but in the future are expected to be about $100,000 less per year.

Equipment Rents

Other recurring and sustaining income is received by the Northern Pacific from equipment rents. Net credits from equipment rentals fluctuate considerably from year to year with variations in the movement of traffic and in the utilization of the company's cars on foreign lines. Normally, the eastbound movement of traffic over the company's lines greatly exceeds the westbound movement, so that the movement of its cars onto foreign lines under load largely exceeds the movement of foreign lines' cars onto its line. During the depression years the reduced volume of traffic throughout the country resulted in a surplus of rolling stock on all lines, and many of the company's cars remained idle on its line.

Loading Steers in Anceney, Mont., for Shipment to the Feed Lots of Iowa and Illinois for Finishing

During the war years, although equipment was in heavy demand on all lines, the westbound movement of war supplies and equipment resulted in an increased movement of foreign lines' cars over the company's lines with consequent increased equipment rentals payable by the company and lower net credits from equipment rentals. During the ten years 1921 to 1930, inclusive, the company's net credits from equipment rentals averaged $2,013,700 per year and varied between a high of $2,566,626 in 1922 and a low of $1,421,760 in 1930. During the ten years 1931 to 1940, inclusive, the average was $861,270, and the variation was from a low of $573,561 in 1932 to a high of $1,224,446 in 1937. During the four years 1941 to 1944, inclusive, the average was $1,747,101, with a low of $1,278,775 in 1944, and a high of $2,176,119 in 1943.

A third supporting asset of the Northern Pacific is its valuable equities in affiliated railroads. The company and the Great Northern each owns 830,179 common shares, or 48.59 per cent, of the Chicago, Burlington & Quincy and 50 per cent of the capital stock and 50 per cent of the bonds of the Spokane, Portland & Seattle.

Earnings on C. B. & Q. Stock

The Burlington operates 8,964 miles of road in Colorado, Illinois, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, South Dakota, Wisconsin, and Wyoming. It owns 12.2 per cent of the voting stock of the Gulf, Mobile & Ohio and 70.7 per cent of the voting stock of the Colorado & Southern. With the Burlington, the Northern Pacific operates the North Coast Limited in through passenger service between Chicago and Seattle. Interchange of freight traffic is made at St. Paul-Minneapolis, and Billings and Laurel.

The Burlington has paid dividends on its capital stock in every year since 1861. During the past ten years, the Northern Pacific has received payments at the rate of $2 per share in 1935 and in 1937-1941, $4 per share in 1936, and $3 per share in 1942-1944, which is equivalent to a 10-year average of $2.50 per share or $2,075,448 annually on the company's stock holding. The dividend received in 1935, amounting to $1,660,358, was covered by reported earnings of the Burlington to the extent of only $895,437 and the 1936 dividend of

$3,320,716 was covered only to $2,505,866, but in each other year dividends received were more than covered. Earnings of the Burlington available for payment of dividends during the past ten years aggregated $115,547,676, of which only $42,709,675 or less than 37 per cent was paid out in dividends. Since the beginning of 1942, the Burlington has reduced its outstanding funded debt by $55,238,898 and at the present time its charges are down to approximately $7,265,000 per year compared with $9,800,448 in 1942, a reduction of $2,535,448 or $1.48 per share. The Burlington currently is paying dividends on the basis of $5 per share.

The Spokane, Portland & Seattle and its subsidiaries operate 944 miles of road in Washington and Oregon, including a line from Spokane to Portland which connects with the Northern Pacific's lines at Spokane and Pasco, Wash., and affords the most direct access to Portland from the east and a direct water-level route along the Columbia river through the Cascade Mountains. The S. P. & S. with its subsidiaries is a valuable feeder for the parent lines, originating a large amount of lumber and forest products, canned fish, and other manufactured products, most of the latter originating in the Portland area.

Over the last ten years, earnings of the S. P. & S. were less than its fixed charges, except in 1942-44, but as the entire funded debt (except equipment obligations) is held by the Northern Pacific and Great Northern, the disposition of income after payment of other fixed charges is under their joint control. During the past ten years income of the S. P. & S. available for fixed charges has aggregated $28,643,305 and fixed charges, other than interest on bonds held by the parent companies, amounted to $4,891,178, leaving $23,752,127 subject to control by the parent lines. Substantial expenditures have been made in the past five years to provide increased facilities and equipment required to handle the greatly increased traffic during the war period.

Land-Grant Property

A fourth underlying asset of the Northern Pacific is its extensive farm and timber and prospective oil lands. By virtue of land grants made to predecessors, the company acquired large land holdings which it has been continuously engaged in administering and liquidating. On December 31, 1944, there were 3,851,358 acres of land unsold in addition to the lands and other properties owned by the railway's subsidiary, the Northwestern Improvement Company.

Of the company's lands, 36,343 acres were in Wisconsin, Minnesota and North Dakota, 2,830,351 acres in Montana and Wyoming, and 984,635 acres in Idaho, Washington and Oregon. In addition, under contracts covering land and timber sold, there was $2,367,398 owing to the company on outstanding deferred balances at December 31, 1944. In disposing of its lands, the company has reserved the mineral rights in lands sold (including rights to coal, oil and gas) where it was advised to do so by its geologists. Consequently, it owns numerous and valuable mineral reservations, which, however, are not reflected in its property accounts and the extent and aggregate value of which are unknown. Net receipts from the administration of the lands have averaged $3.32 per acre.

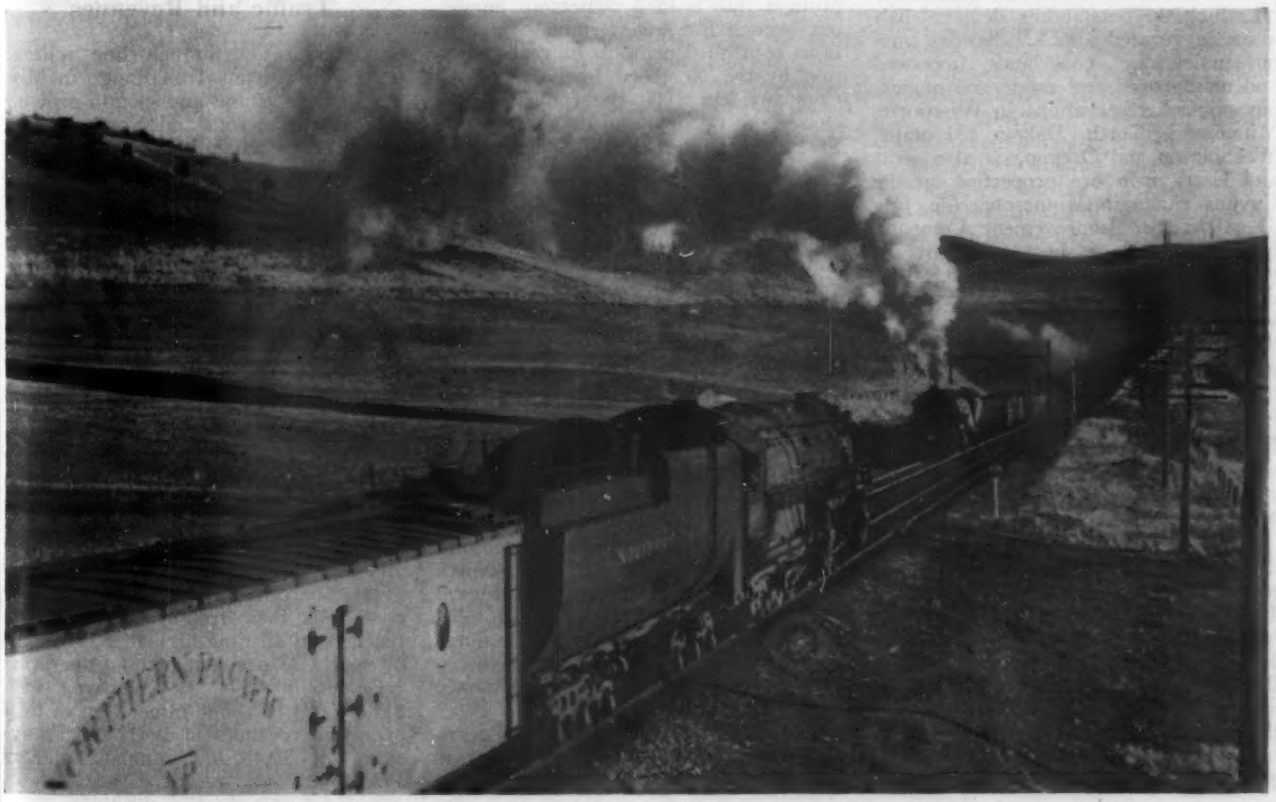
In order not to distort the income accounts, the results of land transactions never have been reflected in the income accounts but are credited to profit and loss. The net results of the company's land transactions during the ten-year period 1935 to 1944 are shown below:

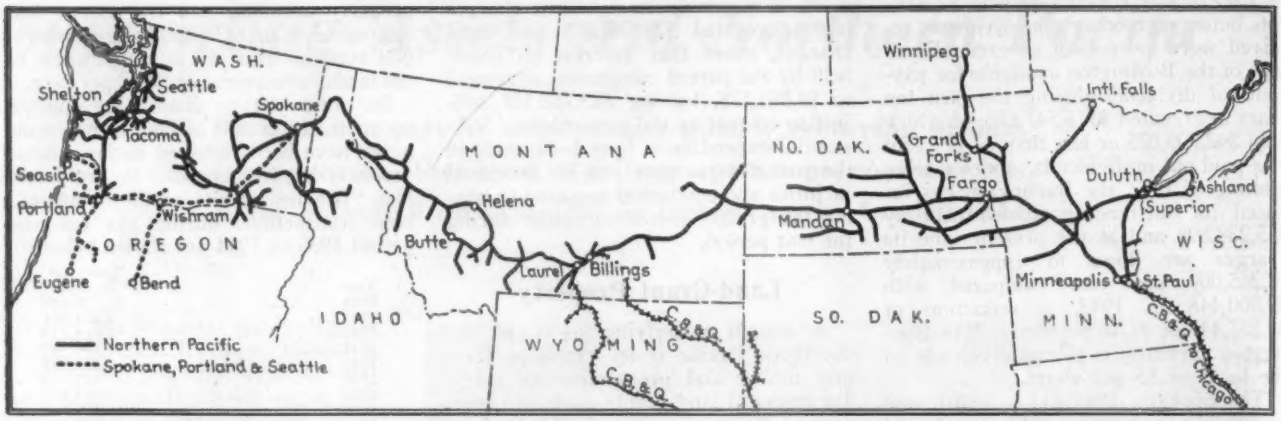
Year	Total-Net Receipts
1944	$1,728,138
1943	3,234,024
1942	1,066,213
1941	1,584,982
1940	1,801,227
1939	548,242
1938	483,512
1937	639,769
1936	237,787
1935	*285,526*
Totals	$11,038,370

* Italics denote red figure resulting from cancellation of numerous land sales contracts and consequent restoration of the lands to the investment account.

Northwestern Improvement Co.

The Northern Pacific wholly owns the Northwestern Improvement Company which with its predecessor has been engaged since 1897 in managing and selling land, both improved and unimproved, including coal and mineral lands, and in mining and selling coal, the major portion of which is used by the company in its operations. The Improvement Company owns and operates coal mines at Roslyn, Wash., originally acquired in 1899, from which approximately 600,000 tons now are mined annually, of which 500,000 tons are sold to the Northern Pacific and 100,000 tons to commer-





cial users. It also operates a large strip coal mine at Colstrip, Mont., on land leased partly from the United States and partly from the railroad, from which 24,500,000 tons of coal have been removed since 1923 and about 2,500,000 tons are produced annually under present conditions, all of which is purchased by the company for railway use. The Colstrip area contains a large quantity of coal, assuring a supply for railroad purposes for a long period. The Improvement Company also owns, and recently took over the operation of a mine at Ravensdale, Wash., which produces a high-grade coal specially suited for industrial and commercial purposes and is estimated to contain about 1,000,000 tons.

At December 31, 1944, the Improvement Company had on hand unsold, 490,000 acres of land in North Dakota and Montana, 106,000 acres of coal and timber lands in Washington, and held contracts of sale of land and timber on which the outstanding deferred balances aggregated $382,421, besides various undeveloped coal lands, improved and unimproved real estate and numerous mineral reservations in Wisconsin, Minnesota, North Dakota, Montana, Washington and Oregon. It also owns and leases iron ore properties on the Cuyuna range in Minnesota. On July 31, 1945, the Improvement Company held $4,750,000 of short term government obligations and had $876,580 in cash.

Its cash will be increased by $1,870,000 as a result of the Northern Pacific's present refinancing (discussed hereafter) when $1,700,000 of the railroad's series B bonds which it now holds are released.

Improvement Co. Dividends

The Northern Pacific received regular dividends from the Improvement Company during the years 1900 to 1915, and 1924 to 1940, and in some years received large extra dividends. From 1935 to 1940, inclusive, dividends received from the Improvement Company exceeded its earnings by $6,566,261. Net income of the Improvement Company from its origin to December 31, 1940 aggregated $73,190,674, of which $59,353,000 was paid out in dividends. No dividends have been received since 1940, although net income for the years 1941-44 and first five months of 1945 has totaled $3,143,317.

History of Company

The Northern Pacific Railway Company is the successor, through purchase at foreclosure sale, of the railroad, land grant properties and franchises of the Northern Pacific Railroad Company, which was created by an act of Congress in 1864 and which built the first of the northern transcontinental railroads. The company was incorporated originally in Wisconsin as the Superior & St. Croix in 1870. In 1895 the charter was amended generally to enable the company to acquire the bankrupt Northern Pacific and in 1896 the name was changed to the Northern Pacific Railway Company. The company later brought into unified ownership numerous branch line and terminal corporations controlled prior to its reorganization by the Northern Pacific Railroad Company. In 1900 the company purchased the railroad and branches of the St. Paul & Duluth extending from Minneapolis and St. Paul to Duluth and Superior, including important terminals, docks and waterfront facilities on Lake Superior at Duluth. In 1941, the company and the Great Northern jointly acquired control of the Chicago, Burlington & Quincy and, in 1905, jointly organized the Spokane, Portland & Seattle.

The Northern Pacific was the first transcontinental railroad to be constructed to the north Pacific coast. It operates 6,867 miles extending from Ashland, Wis., St. Paul and Minneapolis and the Lake Superior ports of Duluth and Superior to Seattle and Tacoma, Portland, and other ports on Puget Sound and the Columbia river, running through Wisconsin, Minnesota, North Dakota, Montana, Idaho, Washington and Oregon. Its operations in Manitoba, Canada, which terminate at Winnipeg, are conducted by the Midland Railway of Manitoba, a subsidiary owned jointly with the Great Northern.

The company owns 6,534 of its operated miles, jointly owns 31 miles, leases 52 miles and operates 250 miles under trackage rights, chiefly branch line mileage. The company also owns, but does not operate, 42 miles leased to other railroads. Its 2,066 miles of main line from St. Paul to Portland via Seattle and Tacoma is double tracked for 668 miles, comprising 288 miles from St. Paul to Buffalo, N. D. (excepting 31 miles, Gregory to Philbrook, Minn.); 69 miles from Garrison to Missoula, Mont.; 186 miles from Seattle to Portland, and numerous shorter sections aggregating 156 miles.

In addition, it has alternate main lines between Logan, Mont., and Garrison and between De Smet and Paradise, Mont., so that there is double track or alternate main line continuously from Livingston, Mont., to Paradise, a distance of 311 miles. It also has an alternate main line, Tacoma to Tenino, Wash., via South Tacoma, a distance of 40 miles, of which four miles are double track.

Traffic and Revenues

Its main and branch line mileage serves the Cuyuna Iron Range in Minnesota, the grain and potato-growing areas of Minnesota and North Dakota, the grain-growing, lumber and mining industries of Montana, Idaho and Washington, the fruit and berry-growing areas, including the irrigated and highly developed Yakima Valley in Washington, and also the fish and lumber industries of the Pacific Coast area. Its main line and branches will serve the large Columbia Basin Irrigation Project, which will receive its water from the Grand Coulee Dam.

An average of 22,284,931 tons of freight traffic per year were handled from 1915 to 1929 and in 1941, a typical prewar year, 21,877,168 tons were handled, accounting for 87 per cent of operating revenue. While the war resulted in large increases in all traffic, passenger and other revenues have shown much greater percentage increases under war conditions than freight revenues, and reached an all-time high of $35,670,500 or nearly 23 per cent of total operating revenues in 1944, as compared with $11,057,084 or about 13 per cent of total operating revenues in 1941, and an average of $9,487,677 annually during 1935-1940.

Normally, less than 10 per cent of the company's freight traffic is overhead or bridge traffic. During the years 1939 to 1941, 68 per cent of the tonnage handled originated on its line and 22 per cent was received from connections and delivered at points on its line.

Composition of the company's freight traffic varies from year to year, but manufactured and miscellaneous commodities are tending to become a larger proportion of the traffic. In 1941 approximately 20 per cent of the freight tonnage was products of agriculture, 25 per cent products of mines, 30 per cent products of forests and 22 per cent manufactures and miscellaneous, compared with the 1915-1929 averages of 21 per cent products of agriculture, 28 per cent products of mines, 34 per cent products of forests and 12 per cent manufactures and miscellaneous.

Sugar Beets Have Become an Important Crop in North Dakota and Fit in with Rotation Farming

Future Traffic Prospects

Earnings during the war years have been abnormally high. The company's strictly war traffic will gradually diminish until the end of demobilization, although it is expected that normal post-war Army and Navy traffic will exceed the normal pre-war movement. In post-war years, the company's traffic volume will be dependent primarily on general business and agricultural conditions. Freight revenues during the nineteen thirties reflect the effects not only of the general business depression, but of an unprecedented drought which continued from 1933 through 1937 with disastrous consequences for agriculture throughout the entire Great Plains region.

As a result of the experiences of the drought years and the prosperity of recent years, farmers throughout the territory served by the company have reduced debt, adopted better dry farming tillage practices, crop diversification practices, the growing of new varieties of grain and grasses resistant to drought and disease, the use to a greater extent of commercial fertilizers and selective weed-killing sprays and dusts, and have greatly increased the mechanization of farm operations. Over one hundred thousand acres of land in the territory served by the company have been brought under irrigation in the past fifteen years, and this, together with the other factors mentioned, is expected to minimize the effect of future low rainfall years on crops and tonnage.

The reclamation program authorized by Congress for the post-war development of the Missouri river and its tributaries contemplates irrigation of 967,130 acres of land in Montana and 1,266,440 acres in North Dakota included in a large number of projects on the Yellowstone and Missouri river watersheds. Many of the areas to be irrigated in both states are tributary to the company's lines, which are well located to enable it to participate also in the haul of the materials required for construction of some of the larger storage and irrigation works. The program is the most elaborate and expensive ever authorized for any river valley in this country and will require many years to complete and very large appropriations.

The Grand Coulee Dam-Columbia Basin Irrigation Project in central Washington, which is served by the company's lines, has been authorized by Congress and when completed will bring about one million acres of land similar to that in the Yakima Valley under irrigation. The irrigated area will be about two and one-half times that of the Yakima Valley, which produced 34,080 carloads of forwarded and 17,160 carloads of inbound freight during 1944. Approximately 42 per cent of the Columbia Basin project area is served exclusively by the company and about 7 per cent in common with other railroads. The dam has been built and about 50 per cent of the hydro-electric installation is complete, including trunk transmission lines, and commencement of work on the vast network of canals required to serve the project area is awaiting the execution and approval of the required repayment contracts and the necessary appropriations.

Current Refinancing

On September 6, the Northern Pacific sold $55,000,000 of collateral trust 9½ per cent bonds dated September 1, 1945, and due in 1975 to Morgan, Stanley & Co. and associates at 98. During an era of extremely low interest rates, the Northern Pacific has been burdened with a large outstanding amount of 6 per cent bonds which were originally issued to buy its interest in the Chicago, Burlington & Quincy and which matured when money rates were high in 1921. About $81,161,600 of these 6 per cent refunding and improvement mortgage series B bonds due 2047 are outstanding, including $1,700,000 owned by the Northwestern Improvement Company, and $10,976,000 are held in the railway's treasury. Proceeds from the sale of the new collateral trust bonds plus treasury funds will be used to redeem the 6 per cent bonds at 110 on January 1, 1946, at which time the treasury-held bonds will be surrendered. The new bonds will be secured by the issuance and pledge of $82,500,000 of Northern Pacific refunding and improvement mortgage bonds, series E, due July 1, 2047.

Debt Reduction

With the advent of the war, the Northern Pacific's earnings improved sharply and the resulting financial recovery has been significant. Between January 1, 1940, and June 30, 1945, the company reduced its bonded indebtedness by $29,988,500. However, between those dates its equipment obligations were increased by $11,326,943 making the net reduction $18,661,557. During the same period, $28,674,042 of equipment obligations were issued for new equipment. Cash payments made for equipment paid for in cash and for down payments on equipment trusts totaled $18,361,214. Annual interest charges on funded debt, including equipment obligations, were reduced from $14,442,821 at January 1, 1940, to $12,824,073 at June 30, 1945, a reduction of $1,618,748. A further reduction of $26,161,600 in bonded indebtedness will be effected by the retirement of the series B 6 per cent bonds and the issuance of the new collateral trust bonds, but a net

Table I—Funded Debt and Equipment Obligations

	January 1, 1946 (Estimated)	June 30, 1945	Dec. 31, 1939	Net Decrease 1946 under 1939
Bonds	$251,287,400	$277,449,000	$307,437,500	$56,150,100
Equipment Obligations	22,382,805	19,795,255	8,468,312	(13,914,493)
Total Funded Debt	$273,670,205	$297,244,255	$315,905,812	$42,235,607
Interest on Funded Debt and Equipment Obligations	$ 10,444,156	$ 12,824,073	$ 14,442,821	$ 3,998,665

increase of $2,520,227 in equipment obligations will result from the issuance on July 2 of $3,500,000 of 1½ per cent equipment trust certificates, the execution of certain conditional sales contracts, and payments made or to be made on equipment trust and conditional sales contracts during that period.

The Northern Pacific's capitalization at June 30, 1945 was as follows:

	Outstanding at June 30, 1945
Funded debt:	
Prior Lien 4s due 1997	$103,765,600
General Lien 3s due 2047	54,445,000
St. Paul-Duluth Div. 4s due 1996	253,000
Refunding Improvement Mortgage due 2047:	
Series A 4½s	18,953,000
Series B 6s	81,161,600*
Series C 5s	7,836,300
Series D 5s	9,156,000
St. Paul-Duluth First Consolidated Mortgage 4s due 1968	1,000,000
Washington Central First Mortgage 4s due 1948	778,500
Equipment Obligations and Conditional Sale Contracts (at various rates and maturing through 1965 in various amounts)	19,795,255
Total	$297,244,255
Capital Stock:	
Common—2,479,984, shares, $100 par	$247,981,000**
Fractional scrip—16 shares, $100 par	1,600
	$247,982,600

* Includes $1,700,000 held by Northwestern Improvement Company.
** Includes $2,033,100 held by Northwestern Improvement Company.

As of June 30, the company was jointly liable with seven other proprietary companies for $14,737,000 of first and refunding mortgage series B 3⅛ per cent bonds due 1971 of the Saint Paul Union Depot Company and also jointly with the Great Northern and the Spokane, Portland & Seattle for $360,000 of Spokane, Portland & Seattle 2¾ per cent equipment trust certificates due July 1, 1947.

A comparison of the company's funded debt and equipment obligations outstanding at January 1, 1940, at June 30, 1945, and the amount to be outstanding at January 1, 1946 is shown in Table I. A summary of earnings for the ten years, 1935-1944, and first five months of 1944 is presented in Table II.

Railway Operating Income

In the 48 years of operation of the properties there has been only one year, 1932, in which the company earned no railway operating income. During the years 1930 to 1939, inclusive, which included the depression and the unprecedented drought extending throughout the entire Great Plains region, the company's railway operating income averaged slightly less than $5,000,000 per year. During the same period, railway operating income also was depressed by land grant deductions from charges otherwise payable at commercial rates for transportation of property and troops of the United States. Land grant deductions, except on military and naval traffic, were abolished in April, 1941. Land grant deductions on military and naval traffic will be abolished 90 days after termination of the war with Japan, if Congress passes the "Boren Bill," which has been passed by the House and was unanimously recommended for passage by the Senate Interstate Commerce Committee on July 28, 1945. The amounts of the annual land grant deductions withheld from the company during the years 1930 to 1939, inclusive, are shown below:

	Land Grant Deductions
1930	$ 525,562
1931	511,460
1932	547,430
1933	569,378
1934	1,003,098
1935	1,243,236
1936	1,174,620
1937	886,727
1938	1,297,615
1939	2,060,794
	$9,819,920
Average	$ 891,992

Rails and Ties

The Northern Pacific's physical property and equipment has been maintained to meet increased war-traffic requirements, but lack of man-power and inability to secure some necessary materials, particularly rail, has resulted in deferring some work that otherwise would have been performed. There is, however, little deferred maintenance. Roadway maintenance is highly mechanized with practically all types of modern labor-saving machinery.

Since 1923 no new rail weighing less than 100 lb. has been laid in the 2,066 miles of main line track between the Twin Cities and Seattle and Portland. In 1938 weight of standard rail section was raised to 112 lb. for tangent and light curvature and 131 lb. for heavy curvature. Approximately 85 per cent of the main line mileage is laid with rail weighing 100 lb. or more. All main line trackage is fully ballasted with crushed rock or processed gravel obtained from 11 plants located along the main line between the Twin Cities and the Pacific Coast. All tie replacements in main and principal branch lines are treated, chiefly in two plants owned and operated by the company at Brainerd, Minn., and Paradise. Approximately 98 per cent of the ties in tracks maintained by the company are treated. Main line and all principal branch lines are fully tie-plated. Main line trackage from St. Paul to Seattle, St. Paul to Duluth, and Seattle to Portland is equipped with automatic block signals.

Equipment and Shops

As of December 31, 1944, the number of units of equipment owned by the company, with the number held under equipment trust and conditional sales contracts shown in parenthesis, was as follows: 833 steam locomotives (65), including 259 switchers and 574 assigned to road service; 36 Diesel-electric switching locomotives (13); nine Diesel-electric road locomotives; 38,651 freight cars (10,516); 554 passenger cars and 4,035 units of work equipment. The age of this equipment was as follows:

Years	Steam Locomotives	Diesel Locomotives	Freight Cars*	Passenger Cars
1-5	44	44	11,251	84
6-10	29	1	3,114	9
11-15	22	..	3,365	10
16-20	13	..	4,727	50
21-25	120	..	8,312	247
Over 25	605	..	7,414	154
	833	45	38,183	554

* Excluding 468 cabooses.

As of June 30, 1945, equipment costing $45,378,662 was covered by $19,862,578 of outstanding equipment trust and conditional sales contracts.

There have been or will be delivered this year 21 Diesel-electric switching locomotives, 1,000 box cars and 30 dump cars. Ninety-six steam road locomotives have been purchased since 1927—44 since 1939. On an order for eleven 5,400-hp. Diesel-electric freight locomotives, nine were delivered in 1944 and two this year.

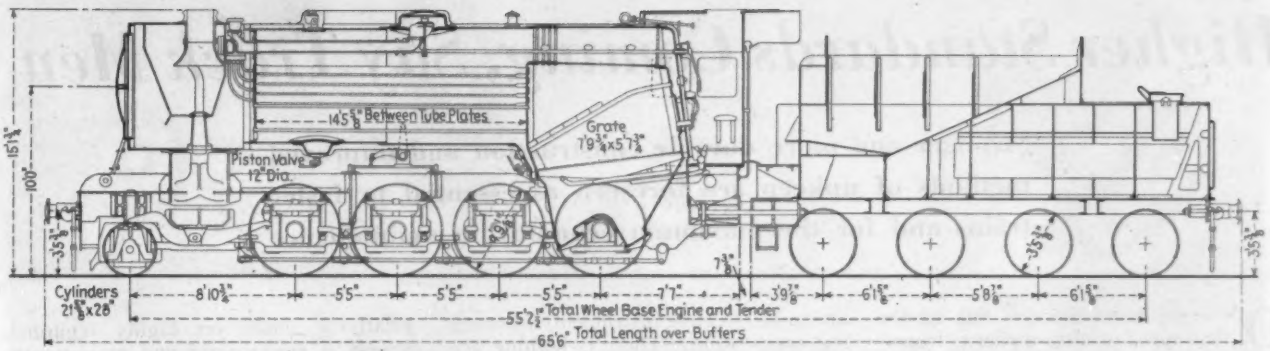
Major shop facilities for the maintenance of locomotives and cars are lo-

(*Continued on page 447*)

Table II—Summary of Earnings

First Six Months	Railway Operating Revenues	Railway Operating Expenses	Operating Ratio %	Railway Operating Income[1]	Net Rents[2]	Other Income	Income Available for Fixed Charges	Total Fixed Charges	Net Income
1945	$72,970,407	$54,867,496	75.19	$7,450,590	$2,401,563	$2,911,408	$12,540,023	$6,560,250	$5,979,773
1944	75,076,825	51,413,905	68.48	8,322,768	2,334,531	778,859	11,150,194	6,951,086	4,199,108
Years									
1944	155,978,310	107,618,188	69.00	19,584,263	3,793,857	4,005,143	26,870,334	13,709,349	13,160,985
1943	151,531,732	92,136,022	60.80	31,791,484	4,631,972	3,929,015	39,949,152	14,428,722	25,520,430
1942	119,310,557	77,229,102	64.73	23,161,667	4,301,437	3,808,654	30,952,799	14,648,882	16,303,917
1941	85,346,327	59,909,720	70.20	16,168,915	3,753,863	2,746,273	22,331,307	14,574,288	7,757,019
1940	68,714,635	51,615,264	75.12	10,063,748	3,519,328	3,811,448	17,164,394	15,100,303	2,064,091
1939	63,882,433	49,679,727	77.77	7,437,747	3,041,490	4,348,611	14,569,065	14,495,411	73,654
1938	57,021,585	47,056,728	82.52	3,128,536	3,168,822	4,263,099	10,320,925	14,643,339	(4,322,414)†
1937	64,851,199	52,011,662	80.20	6,974,710	3,676,293	4,119,058	14,529,415	14,411,674	117,741
1936	61,906,306	48,318,405	78.05	7,188,917	3,599,270	5,597,111	16,136,863	14,320,079	1,816,784
1935	53,845,654	44,093,600	81.89	4,450,368	3,275,974	7,233,302	14,722,716	14,290,934	431,782

[1] Net revenue from railway operations less railway tax accruals. During the ten year period, no federal income taxes were accrued prior to 1941. Subsequently, federal income and excess profit tax accruals were as follows: 1941—$1,503,750; 1942—$9,959,853; 1943—$17,408,119 and 1944—$17,833,900 (including $9,543,240 excess profit taxes).
[2] Equipment rents—net, plus joint facility rents—net. Average annual net credit from joint facility rents during ten year period above was $2,422,892. † Deficit.



British-Designed 2-8-0 Locomotive Being Built for Use on European Railways—Designing Was Started in 1944 with the Cooperation of Railway Engineers from Occupied Countries

"Liberation" Locomotive for Europe

Built in Great Britain, it combines the best features of United States, British and Continental practice—Designed especially to meet European operating needs

*By H. H. SAUNDERS**

EARLY in 1944, when the rehabilitation of Europe was already under consideration, Britain's Locomotive Manufacturers' Association was asked by the Ministry of Supply to prepare preliminary designs for a locomotive which, while being more powerful than the "Austerity" type then being built for the War Department, would still be suitable for universal use on the railways of the continent.

It was specified that the new locomotive should have a tractive force of 40,000 to 50,000 lb.; a boiler with a wide firebox having 40 to 50 sq. ft. of grate area; and, an axle-load of not less than 40,300 lb. A further requirement was that the locomotive should be designed to the limitations of the Berne international rail gage and be capable of traversing curves of 330 ft. Preliminary investigations showed that these requirements could be met by a locomotive of the 2-8-0 type, and preliminary designing for a locomotive of this type was undertaken.

The necessity for the conservation of labor and materials made it essential that only one type of locomotive should be built and that it should be relatively easy to manufacture from materials available in Britain, although it was realized that it was desirable that the locomotive should conform as far as possible to the practices of the various continental countries.

It was also considered essential by the designers, in view of the possible lack of repair facilities in Europe on the cessation of hostilities, that the locomotive should be as simple in design as was consistent with good performance and that maintenance and repair should receive primary consideration in all features of design. For this reason it was decided that the locomotive should be designed throughout to metric dimensions except for appliances of proprietary manufacture where, to facilitate obtaining spare parts, it was considered essential to retain manufacturers' standards. It was also decided that all machined and replaceable parts should be manufactured to the International Standards Association system of tolerances to insure inter-

(*Continued on page 446*)

* General manager of the Vulcan Foundry Limited of Great Britain and a designer of the locomotive described.

Design Features of British-Designed Locomotives for Service on European Railways

A large capacity boiler following British and American practice and having a wide firebox and large grate area.
A high-capacity superheater to give the high superheat temperature demanded by Continental railway engineers.
Brick arch support on the arch tubes in accordance with American practice.
A hand-operated rocking grate with finger bars in two sections.
A hopper ashpan of welded construction with bottom dump doors.
Numerous boiler washout doors of Continental design and, in accordance with Continental practice, blowoff cocks mounted on the firebox throat sheet and on a mud collector on the barrel of the boiler.
Cylinders with large diameter piston valves and generously-proportioned steam ports.
Long-lap, long-travel valve gear designed without offsets in the valve gear components.
Springs placed above the journal boxes and compensated in two groups to give easy riding to the locomotive.
A cross-compound air compressor to meet the heavy braking demands for operating fully-braked, heavily-loaded freight trains.
An air-operated sanding arrangement with the sandbox located on top of the boiler.
Injectors of special design located in the cab to prevent freezing in the extremely-cold winter climate of Eastern and Southeastern Europe.
Complete electric lighting equipment with current supplied from a steam-driven turbo-generator.
Mechanical lubricators to cylinders and journals.
Grease lubrication for springs and brake gear.
Tender tank of welded construction.
Tender trucks with one-piece cast steel side frames with journal boxes cast integral and cast steel bolsters. The latest American pattern is followed but the parts are of British manufacture.

General Dimensions, Weights and Proportions of the Liberation Locomotive, Built for European Service

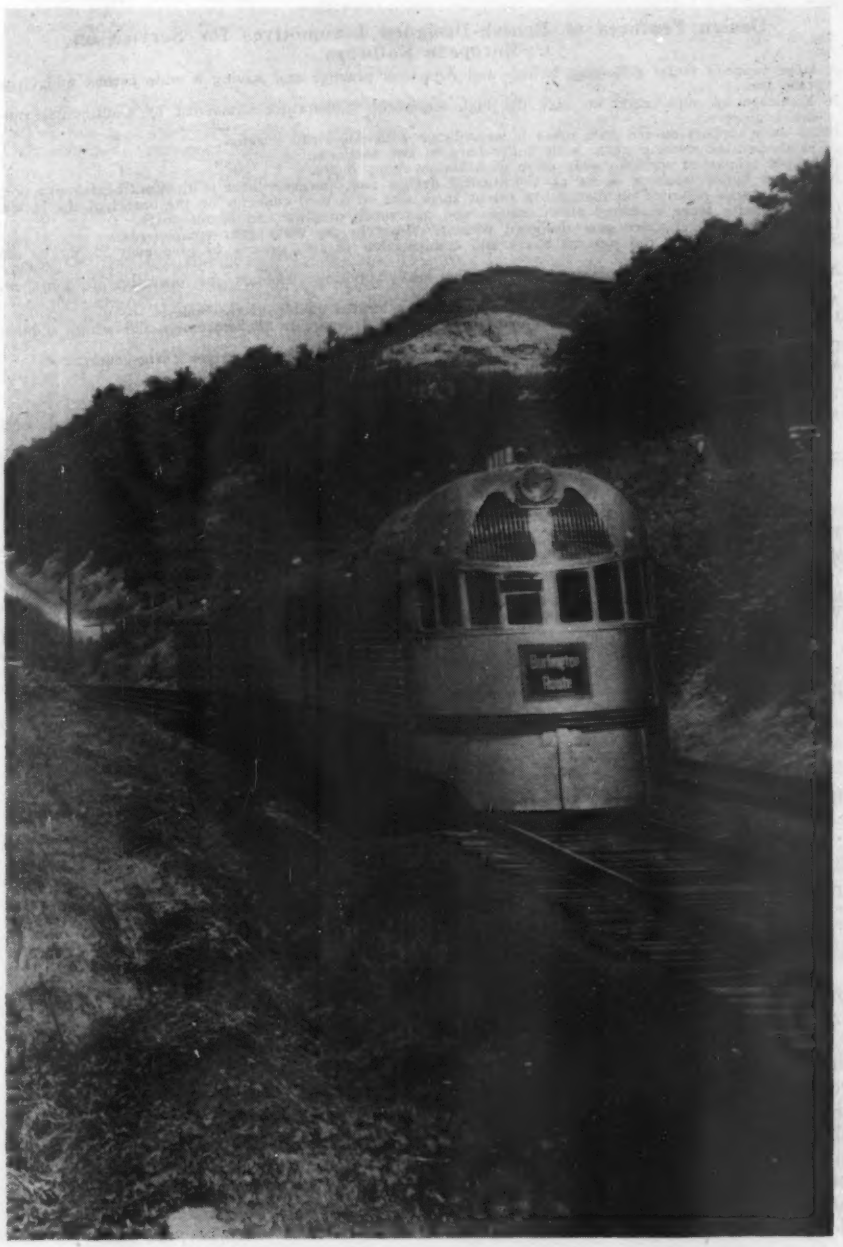
Type of locomotive	2-8-0
Date designed	1944
Service	Freight
Tractive force, lb.	43,800
Ratio of adhesion	3.78
Weights in working order (with copper firebox) lb.:	
On drivers	165,680
On front truck	23,500
Total engine	189,180
Tender	136,640
Boiler:	
Steam pressure, lb. per sq. in.	225
Grate area, sq. ft.	44
Tubes, number and diameter, in.	36-5½
Flues, number and diameter, in.	183-2
Arch tubes, number and diameter, in.	3-2¾
Length over tube sheets, ft.-in.	14-5½
Heating surfaces, sq. ft.:	
Firebox	175
Tubes and flues	2,038
Total evaporative	2,213
Superheater	660
Combined evaporative and superheater	2,873
Tender:	
Water capacity, gal.	6,602
Fuel capacity, tons	11¼

Higher Standards Coming, Say Track Men

Stronger and more durable construction and improved methods of upkeep are foreseen as essential to faster trains and for the maximum economy in maintenance

ON every hand there is talk of the new types of ultra-modern streamlined passenger trains that the railroads will soon be introducing as their answer to increasing competition. But what about the tracks on which these trains must operate? Are the present, or pre-war, standards of construction and maintenance good enough to permit the higher speeds, with comfort and safety, that will be required if the new trains are to be effective instruments for meeting competition? There is nothing academic or abstract about this question. It is a matter of vital importance in the future strategy of the railroads and, as such, it is receiving serious consideration by those who are responsible for providing tracks having characteristics commensurate with the demands to be made on them.

If the viewpoints on this matter of a relatively small, yet highly regarded, group of engineering and maintenance officers can be accepted as being representative of the thinking now being done by this class of railway men as a whole, there is no question about it—the railroad track of the future will, in general, conform to higher standards than ever before. To be specific, 14 engineering and maintenance officers were requested to express themselves regarding the question: "Do you visualize an era of higher track standards, greater refinements and necessary maximum efficiency in performing work? Have you plans to this end?" Answers to this question were received from ten officers representing some of the largest and most important systems in the country. Of those answering, nine extended permission to quote them directly.



The General Belief in Many Quarters Is That Shortened Train Schedules Will Call for Higher Track Standards

Almost without exception the answers to the first part of the question were in an affirmative vein. While some differences of opinion are expressed regarding details or methods of execution, a large majority of those replying are agreed on the broad proposition that an era of higher track standards is in the offing. Incidentally, it is apparent from the answers received that track men as a whole, although sorely pressed in recent years by heavy war-time responsibilities, have not neglected, figuratively speaking, to keep an ear to the ground for indications of what the future will require of them and their departments.

As was to be expected, the necessity of preparing for higher train speeds and shorter over-all train schedules was the primary reason given in the replies for the need for higher track standards. But underlying this thought in several of the answers is the expressed conviction that improved standards, particularly as regards materials, are necessary to secure the longer service life that must be realized if maintenance costs are to be kept to a minimum. In other words, the proposition appears to narrow down to one of bringing the properties to a new high standard, while keeping maintenance costs under rigid control.

Basic Changes Not Expected

A number of the answers were phrased in succinct terms without elaboration of the means by which it was planned to

To Assure Satisfactory Riding Conditions for High-Speed Trains Careful Attention Will Be Given the Matter of Maintaining Track to the Proper Line, Surface and Gage

bring about the standards sought, but others went on to discuss this phase of the subject in more or less detail. In none of the replies, however, was there any indication that consideration is being given to changing the track structure in any of its fundamental aspects; rather, the process is expected to be one of improving, strengthening and refining the various components of the structure as it now exists. Beyond this, various additional expedients were mentioned for obtaining better track and reducing maintenance costs, these including the more extensive use of mechanized equipment, the wider application of improved methods of stabilizing the roadbed, greater emphasis on obtaining better supervision, and more care in the selection and training of employees.

Higher Standards

The answers for which the privilege of direct quotation was extended follow, arranged alphabetically by railroads.

"There is no doubt in our minds that we are entering an era of higher standards and greater refinements in connection with maintenance of way materials, and we are convinced that everything possible should be done to raise our standards, particularly as to materials, in order to secure the longest possible service life. In this connection, it goes without saying that in order to secure the longest service life for the materials applied in the future, we must also raise our standards as to drainage, roadbed stabilization and a continued improvement as to line and surface.

"In this connection it will be necessary substantially to improve and extend our supervision in order to insure that materials are properly applied and with greater efficiency. While it may not be fair to say that we have definite plans to accomplish these objectives, it is a fact that we have clearly in our mind that they are desirable or even necessary and we propose to make every effort to accomplish them." — *F. R. Layng, Ch. Engr., Bessemer & Lake Erie.*

"It is generally agreed, I think, that post-war competition for business, both freight and passenger, but particularly for passenger business, and perhaps for mail, express, and other high-rated commodities, will be even keener than it has been in the past. If this assumption is correct, the railroads, if they are to hold their own, must necessarily provide more attractive service than ever before.

"The phrase, 'attractive service' covers such a multitude of angles that it is almost impossible to list them all, but speed, comfort, safety, reliability, availability, courtesy, and many other factors are involved. Almost certainly schedules will be returned to the pre-war level and probably shortened. This will necessarily call for higher track standards and very careful maintenance.

"Reduction of curvature may not result in a very great over-all shortening of the time but it may add substantially to the comfort of the trip, and all factors must be considered. The shortening of over-all schedules can best be done by eliminating or reducing delays at terminals and other station stops, rather than by excessive speed when running. This calls for the greatest possible efficiency in train servicing facilities. All of these matters are being considered and very carefully weighed, and improvements are being tentatively planned which will add to the attractiveness of Burlington service.

"While perhaps the equipment of the train itself is the most important factor in the public evaluation of service which a railroad offers, it is our opinion that

station facilities play an important part, particularly at the larger points, but certainly dilapidated way stations do not add anything to the attractiveness of a trip, and all of these matters are being given consideration. Also, the important part which automatic signals, C.T.C., etc., will play in making possible a creditable performance has not been lost sight of.

"It is almost needless to comment on the necessity of the greatest possible efficiency in performing work. This is required, not only from the standpoint of reducing the cost of the work, but it is equally important in order to avoid delays to traffic, which will undoubtedly become more important as schedules are tightened up in the post-war period."—*H. R. Clarke, Ch. Engr., Chicago, Burlington & Quincy System.*

More Work Equipment

"In the years immediately ahead, fast and dependable train schedules will demand high standards in track construction and maintenance. Refinements in design and improved quality of materials will be needed as well as better workmanship in the field to produce these high standards.

"The work being done by the research men and committees of the American Railway Engineering Association in developing improved track and roadway designs, and their studies in the economies of maintenance of way labor will have greatly increased importance. The recommendations coming out of these studies will be of great assistance to railroad maintenance officers in meeting their problems in the future.

"The high standard of track maintenance needed in the coming years will require careful planning and maximum efficiency in carrying out maintenance of way work. It will require intensified supervision and the fullest utilization of power machines. There have been considerable advances in the use of power work equipment in the past few years and, with the close of the war, this type of equipment is becoming more readily available. The results to be obtained from the full employment of power machines is probably one of the brightest spots on the horizon for the maintenance of way departments.—*W. G. Powrie, Engr. M. of W., Chicago, Milwaukee, St. Paul & Pacific.*

"We will probably have to insist on higher standards of track maintenance in the future as we expect that speeds will go up considerably. With that in mind we expect to use more 131-lb. rail and larger tie plates, and to do more ballast cleaning and drainage work. We will make a very strong effort to increase the amount of off-track equipment in use, such as is employed for drainage, ditching, etc. We will use more mechanical equipment for tamping, and as improved machinery comes on the market we will give it consideration. It is too early yet to indicate just what kind of machinery will be used in view of research now being carried on by the manufacturers." — *I. H. Schram, Ch. Engr. M. of W., Erie.*

"Think most decidedly that higher standards and greater refinements will be necessary to meet the demands of the operating department for handling both freight and passenger trains more expeditiously on faster schedules. Briefly, it seems that we cannot do much until labor becomes more plentiful—and there is a great deal to do because the requirements are going to be greater, both to eliminate delays and to move trains on faster schedules." — *C. M. Nye, Ch. Engr., Great Northern.*

"Increased competition will require higher train speeds and reduced maintenance and operating costs in the post-war period. Higher speeds will require a higher degree of track maintenance which will increase costs. We will have to be more discriminating in analyzing justifiable expenditures in the future than in the recent past. Efficiency in performing work will be one of our major objectives, and the adoption of higher track standards and greater refinements will be dependent largely upon the economies they produce. These objectives are not new and we do not have any revolutionary ideas to accomplish the desired results.

"Efforts to reduce mechanical wear on ties, and a more rigid specification—and adherence to that specification—in the selection and production of ties will receive our careful attention. We anticipate that the adoption of larger tie plates, longer joint bars, larger ties, better ballast, a more stabilized roadbed, and improved track drainage, to which we have been directing our attention in recent years, will be productive of beneficial results.

"Perhaps the greatest field for improved efficiency in performing work will be in the selection, stabilization and supervision of employees engaged in maintenance activities. The elimination of overtime and penalty rates will also be beneficial. A more general, efficient and systematic use of power machinery and labor-saving devices, involving more careful training of skilled employees, better planning of work and distribution of material, and better supervision to get the maximum utilization of the equipment, should result in more favorable performance than has been possible in the war period.

"One objective of the Illinois Central will be to decrease the use of contract work in connection with some phases of our activities and to depend to a greater degree on the utilization of company forces."—*C. H. Mottier, Vice-Pres. and Ch. Engr., Illinois Central System.*

Curve Reductions

"I do visualize an era of higher standards and greater refinements in performing our work, but I am not so sure that these objectives will be attained because of labor efficiency being increased very much. I have no plans with respect to this matter at present."—*A. A. Miller, Ch. Engr., M. of W., Missouri Pacific.*

"The higher speeds at which both freight and passenger trains are being operated will be further extended, primarily by eliminating entirely or raising existing slow orders so as to allow longer sustained speeds. In many instances, this will mean curve and grade reductions and the complete rebuilding of layouts through congested areas. To assure satisfactory riding conditions, it will be essential that irregularities in line, surface and gage of the track be smoothed out or improved, and the whole track structure maintained to a high standard."—*S. E. Armstrong, Engr. M. of W., System, New York Central.*

"There is no question but what we face an era of higher standards, greater refinements and necessary maximum efficiency in performing work. The necessity for increased speeds will require a higher standard of maintenance on our tracks. Several months ago we started courses in job planning, job methods and job relations for our supervision. This has already given good results and we expect that when it is finished it will be of considerable benefit."—*E. E. Oviatt, Ch. Engr., New York, New Haven & Hartford.*

"Liberation" Locomotive

(*Continued from page 443*)

changeability of parts and facilitate the supply of needed replacements.

Preliminary designs and specifications embodying the above features were prepared and were submitted to the Technical Advisory Committee of Inland Transport for consideration. The members of this committee, comprising railway representatives from France, Belgium, Holland, Czechoslovakia, Poland, Yugoslavia and Greece, were afforded, at meetings in London and also during visits to the plants of the designers, every opportunity to discuss the design in detail. With their cooperation the final design of the locomotive was completed and the manufacturing drawings put in hand late in 1944.

The main features of the design of locomotive finally agreed upon are shown in the drawing and tables. It will be noted that, while the locomotive exhibits the basic features of British design, most notably in the retention of plate frames, many features have been introduced not common in British practice. This policy, which has only been made possible because in the present instance the designers have had the unique opportunity of designing from a "clean slate," has been adopted in an earnest endeavor to design a locomotive embodying what are considered to be the best features of British, American and Continental practice. It is, in the designers' opinion, on such lines that the most efficient locomotive from the operating and maintenance angles will be evolved.

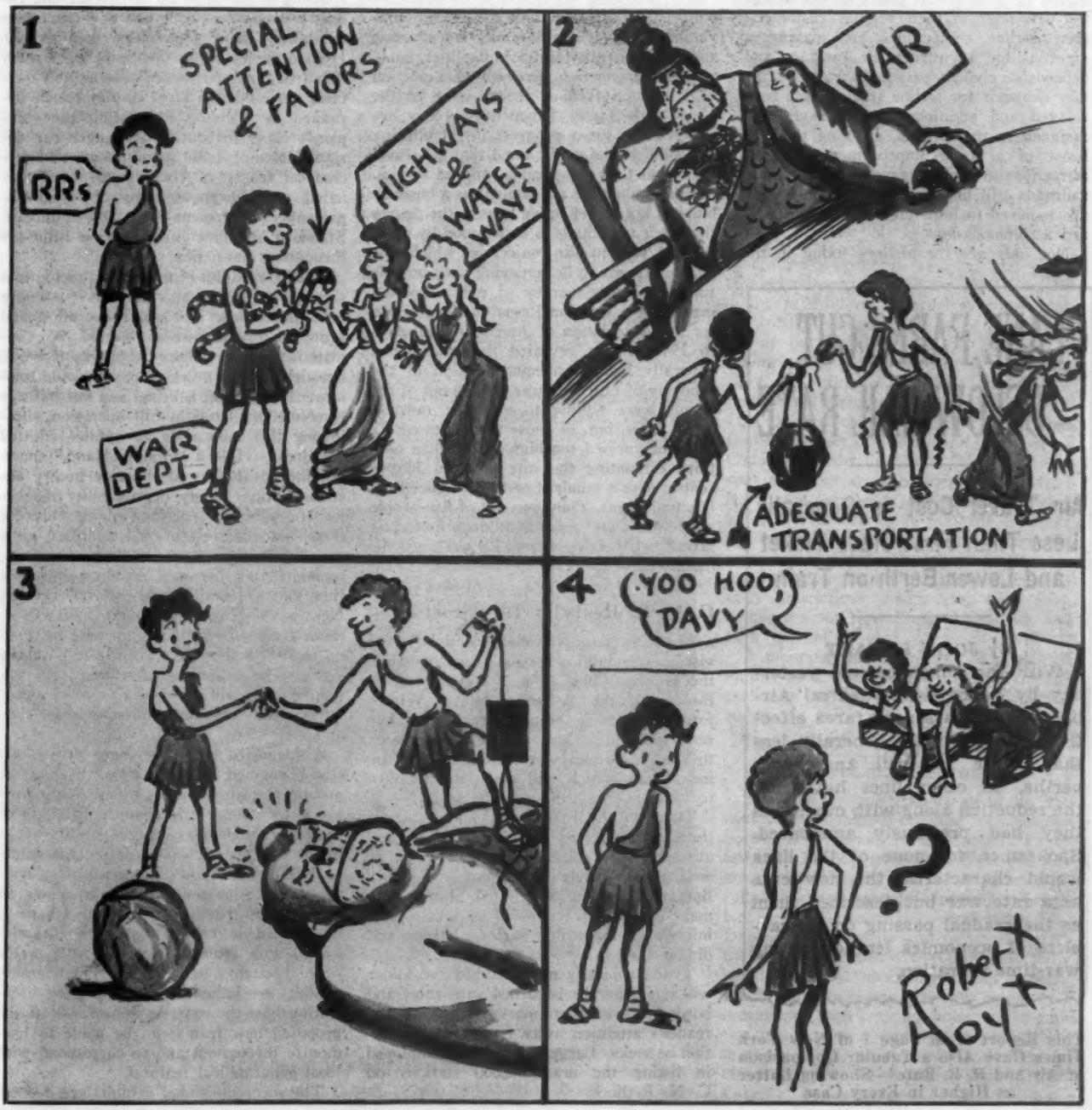
Supporting Assets

(*Continued from page 442*)

cated at St. Paul and Brainerd; Livingston and Laurel; and South Tacoma and Auburn. In addition, adequate and well-equipped shop and roundhouse facilities are maintained at all division terminal points. A major expansion and modernization program to equip the shop facilities at Livingston to handle repairs of large locomotive units economically was begun in 1943, and although not yet entirely completed, these facilities were put into operation in the latter part of 1944. This expansion included the construction of a modern power plant and of a large shop for the exclusive purpose of maintaining roadway work equipment units. Total expenditure approximated $2,400,000. Expansion of the Brainerd car shop facilities was started in 1944 and will be completed this year at an approximate cost of $1,750,000. This shop will be equipped to build new cars, which the company has not heretofore been able to do, and to make heavy car repairs. A Diesel locomotive shop of the most modern type and equipped with the latest tools for maintenance of Diesel equipment was completed at Auburn in 1944 at a cost of approximately $425,000.

Since 1939 the company has expended over $25,000,000 to provide additional trackage, roadway structures and other improvements to its fixed properties, including the expenditures for the shop facilities mentioned above. During the period it expended more than $4,000,000 in line changes and curve reductions to reduce main line distance and permit high-speed operation. A line change project now under way between New Salem, N. D., and Kurtz, will reduce the distance between these two points from 25 miles to 16 miles and eliminate 498 degrees of curvature. A new single track tunnel through Bozeman Mountain (2,850 ft.) west of Livingston was placed in operation on July 28 and will enable the road to operate larger locomotives and handle loads of greater overall dimensions than could be passed through the old tunnel.

Who Helped David Most to Kayo Goliath?



GENERAL NEWS

"Cheaper Than Rail" Is Airlines Claim

Wide publicity for rate cuts said to give them price edge on railroads

While the railroads are devoting their best efforts to accommodating the non-recurring war travel business and are required by government policy to discourage the patronage of their regular customers, their airline competitors are making a vigorous bid to attract the constant and dependable civilian passenger traffic. Military demands for airline service have been relaxed and additional planes have been assigned to the airlines, enabling them to boast of a great improvement in their attractions to civilian travel at a time when railroads still have no new equipment and are required to limit civilians to substandard accommodations.

Not only are the airlines fixing in the public mind, by their advertising, the conviction that they are now offering superior and rapidly improving travel facilities, but—as the reproduction herewith of a portion of a column from a recent issue of the New York Times demonstrates—they are also making great progress in establishing the belief in the public mind that air travel is cheaper than comparable railroad service.

Price reductions are popular as a business builder, but are effective only to the degree that their magnitude is understood by prospective patrons—an objective which the airlines appear to be achieving with notable success. In the survey of public opinion made by the Opinion Research Corporation for the Association of American Railroads in 1941 it was revealed that the public generally had no adequate notion of the economy of railroad fares. Seven out of ten people were willing to guess at railroad coach fares, but, of those who guessed, 72 per cent guessed too high—more than one-third estimating the rate at from 30 per cent to over a hundred per cent higher than it actually was. Only two out of five people would make any guess at all as to first-class fares, and their opinions also averaged far off the bull's eye.

PLANE FARES CUT BELOW RAIL RATE

Air Travel Cost Is Generally Less Than First-Class Ticket and Lower Berth on Train

By JOHN STUART

With the announcement yesterday by Pennsylvania-Central Airlines of air passenger fares effective today at rates generally less than those for rail and lower berths, all other lines have met the reduction along with other cuts they had previously announced. Spokesmen for none of the lines would characterize the new cuts as a rate war but described them as the gradual passing on to travelers of economies learned during war-time operation.

This Report from Page 1 of New York Times Gave Also a Tabular Comparison of Air and R. R. Rates—Showing Latter as Higher in Every Case

Carl Gray Nominated to Be Major General

Brigadier General Carl R. Gray, Jr., director general, Military Railway Service, has been nominated by President Truman for promotion to the rank of major general. The nomination went to the Senate on September 10.

C. N. R. Restyles Its Timetables

The Canadian National promises a revised and simplified version of its timetable, the familiar "blue folder," by the end of this month. And, according to J. T. Whiteford, manager of the passenger service bureau, the public will find it much easier to read, with clear-cut instructions on the index page which will assist the traveler to "find his way through the folder."

There will be listed arrival and departure times of about 1,100 passenger trains operating between points on the C. N. R., as well as those running in part over other lines to points in the United States. The make-up of each train will be shown with information regarding parlor, sleeping and dining cars.

Typographically more legible, the folder will no longer be burdened with rules and borders, and other marks diverting the reader's attention away from the information he seeks. Larger type will be employed in listing the nearly 6,000 stations on C. N. R. lines.

"Tomorrow's Trains" Viewed by Public

Pullman-Standard exhibition will be held in Chicago throughout September

The Pullman-Standard Car Manufacturing Company's display "Tomorrow's Trains Today" was given its first Chicago public showing in the Museum of Science and Industry on September 9, and will remain on exhibition there through September 30. Housed next to the museum's permanent "Hall of Transportation," the exhibit contains more than 25 large display panels arranged in a circle, illustrating the company's ideas for future passenger car design, including both appointments and mechanical features. Also shown are illuminated, colored photographs of streamline passenger equipment built by Pullman-Standard and now in service on railroads throughout the nation.

The first exhibit of the set is a pictograph showing railroad, air and bus passenger route-miles now in regular operation and proposed for the post-war period. No estimate is given for additional bus-route miles, but airline route miles proposed would total more than present railroad and bus mileage combined if placed in full operation. Following this tableau is an exhibit entitled "Railroads Hold a Winning Hand," showing the advantages of superior luxury accommodations, safety, dependability of service and schedules, privacy of accommodations, potential recreational facilities while traveling, greater choice of accommodations, economy and increased amounts of usable time that are available to the rail traveler. Next is a display showing actual passenger-miles created by railways, air and bus lines up to 1941 and projected into the post-war years. The graphs suggest that rail passenger-miles will continue to exceed air or intercity bus passenger miles for some time at least.

A suggested large passenger station design is covered in the next two displays. A prominent feature of this design is the provision for complete mechanical handling of passengers' handbags between storage racks in the cars themselves to designated points in the station. It is designed for use with any type of passenger equipment now in service but reaches maximum efficiency when used in conjunction with cars designed with interior baggage racks accessible through outside doors. The station exhibits are followed by two displays illustrating how the exterior appearance of the proposed new trains can be made to harmonize throughout and to correspond with local geographical features.

The succeeding nine exhibits are devoted

to proposed new passenger equipment, except for one display which illustrates the principles followed in the interior decoration of a Santa Fe lounge-observation car so as to make it harmonize with the section of the country traversed. Each of the other displays contains an artist's drawing of the car interior, a floor plan and a cut-away model of the proposed car, in addition to explanatory matter. Shown are a four double-bedroom, four compartment, two drawing-room luxury sleeping car, a five double-bedroom, 10-roomette car; a 24-duplex room double-deck sleeper; an economy three-tier sleeper, seating 42 passengers; a 42-seat dining car, with new diagonal seating arrangement; a deluxe 48-passenger "day-nite" coach featuring what is described as "chaise longue" type seats; a full size set of four of the new coach seats described above; a 112-passenger de luxe suburban coach known as the "Threedex" car, featuring three passenger levels and luxury facilities normally found only in long-distance coaches; and an observation-recreation car featuring a day-time lounge room that can be converted into a "night club" and an observation compartment that becomes an evening motion picture theater. All of these proposed passenger car designs have been illustrated and described in various issues of the *Railway Age* during the last year.

The remaining exhibits are devoted to mechanical and design details of railway passenger equipment. The first describes the improved lighting system, both natural and artificial in the new cars and illustrates the uses to which a train communication system can be put. This is followed by a panel setting out the reasons for air-conditioning and describing the operation of Pullman-Standard's air-conditioning system. Next is a description of the methods of insulation against temperature and sound, with a phantom drawing showing the points that must be protected. On the same panel is a description of Pullman-Standard's hotbox alarm device, with actual control panels mounted on the display and a schematic diagram of the system.

Still another exhibit shows, by means of working models, how a modern car truck absorbs road-bed shocks. This is succeeded by a display illustrating the differences between ordinary automatic air brakes and electrically activated speed-control brakes. It proposes a maximum braking ratio varying from 250 per cent to 100 per cent for service applications as compared with a flat ratio of 90 per cent for conventional brakes. Also included is a diagram illustrating the operation of an anti-wheel-slide device.

The next two exhibits contain photographs of car construction, using either aluminum or high strength steel alloys. Small sections of actual car sides and roofs are on display. There are two additional panels devoted to welding, one to research and the other to production welds. Included are enlarged photographs of welds and actual samples of welds made in the company's plants. The final exhibit shows the method of constructing the car underframe, pointing out the necessity for good design to secure a strong safe car.

In the center of the room there are colored photographs of modern passenger cars and streamline trains now in operation on twelve railways, while mention is made of five others for which there are no illustrations. There is also a full size section of the proposed new dining car, demonstrating the increased accessibility, both to passengers and waiters, of the new seating arrangement.

The exhibit was shown privately to railway officers in Chicago, New York and Washington, D. C., last winter, but due to the fear that it would stimulate travel, it was not shown to the public except in Washington, where the Department of Commerce asked that it be used to demonstrate industry's readiness to bridge the gap between war and peace production. At that time, the display was viewed by more than 7,500 people during the five-day public showing.

* * *

B. & O. Trademark Replaces the Swastika

Lt. Col. John S. Major, superintendent of equipment of the 708th Railway Grand Division, in Germany, and former division master mechanic of the Baltimore & Ohio, at Staten Island, N. Y., photographed with civilian German employee before a captured Henschel condenser-type locomotive.

B. & O. Booklet Called a Real "Best Seller"

"Here She Comes," the amusing little book on railroading along the Baltimore & Ohio, written by Don Herold, author-cartoonist, and noticed in the *Railway Age* of July 28, page 183, has proved a "smash hit," the railroad reports. Soon after publication, the B. & O. was swamped with "an avalanche of letters," from railway officers, industrialists, professional people and the military, and, to date, more than 123,000 copies have been printed.

The B. & O. passenger department observes that this response, which "is continuing," has broken all records for similar distribution pieces. "It begins to look as though in 'Here She Comes,' we have a real 'best seller'," the railroad adds.

New England Shippers to Chart Future Course, September 28

Convinced of the urgency of taking immediate steps "to bring about every possible improvement in railroad and other transportation facilities," the New England Shippers Advisory Board has called upon its 1600 members to assemble September 28, at the Hotel Statler, in Boston. In giving notice of the shippers' first meeting since the lifting of O. D. T. restrictions prohibiting large gatherings, William H. Day, general chairman of the board, and traffic manager of the Boston Chamber of Commerce, said there was "urgent necessity for active work to increase industrial activity in our region; to expand our markets; and to see to it that the force of the hundreds of New England shippers and receivers included in our membership is put behind a demand to remove immediately restrictions which are, even now, hampering our New England railroads and their patrons."

A planning committee will be appointed at this session to "actively handle the direction of our future course," the chairman added.

Americans Operate 10-Mile Railroad in Argonne

Firewood for American troops in the "redeployment" camps of the Oise Intermediate Section and Rheims Area Assembly Command, in France, is brought from the Argonne forest by a 10-mile 31½-in.-gage railroad which emerged from the Krupp factories in Germany only three years ago. Dubbed "LaBagatelle and Great Eastern" by Army railroaders, the tiny line, with its six engines, employing Diesel motors, 125 flat cars and some passenger equipment, is equipped with stopping points given station names with a flavor of the old West in them. Signs at various places identify "Ghost City," "El Dorado" and "Crater Lake."

In the first World War the Germans had

built a similar line through the Argonne to haul men and supplies, but following their defeat the forest again became almost a wilderness. The new railroad, built by German prisoners-of-war and manned by about 200 Germans supervised by Americans, is laid along some of the 1918 roadbeds. Serving as a feeder line to the Argonne railway is a portable railway using 24-in. track.

N. I. T. League President Talks on Union Pacific Broadcast

John B. Keeler, president of the National Industrial Traffic League, in an address September 9 on the Union Pacific program "Your America" over the Mutual Broadcasting System, dealt with the harmony nowadays existing between railroads and shippers.

"Years ago," observed Mr. Keeler, "the League and the railroads worked out a plan under which rate proposals of both the railroads and shippers are publicly aired. In this way all interested parties are apprised of proposed changes in rates and given a full opportunity to be heard." This plan, he said, had worked "satisfactorily" for both the shippers and the carriers.

U. P. Observes 25th Anniversary of Carl R. Gray Scholarships

The winter of 1945-1946 will mark the 25th anniversary of the Carl Raymond Gray Scholarships, awarded each year to the outstanding vocational agricultural student and 4-H club boy or girl in each of the 176 counties served by the Union Pacific.

The award consisting of $100 was first made to a 4-H club member in Nebraska in 1921, and was originated by the late Carl R. Gray, then president of the railway. After a year's trial operation in that state, it was extended to Kansas, Colorado, Wyoming, Nevada, Utah, Idaho, Oregon, Washington and Montana. In 1926, an additional scholarship in each county was added to provide for the outstanding vocational agricultural student, this latter plan also covering four important citrus producing counties in California. In 1937, when William Jeffers succeeded Carl R. Gray as president of the Union Pacific, the award was designated as the Carl Raymond Gray scholarship in memory of Mr. Gray.

Since its inception in 1921, 4,759 winners have been announced and 3,061 awards have been used, 1,180 of which were chosen from among vocational agriculture students and 1,881 from 4-H club members. Speaking of the benefits derived from these awards, W. W. Burr, dean of agriculture, University of Nebraska College of Agriculture said: "Probably no contribution to social improvement made by the Union Pacific has brought greater benefit than the establishment of these scholarships. Many of them would have had neither the opportunity nor the inspiration to attend college had it not been for the scholarships. They were outstanding young men and women, many of whom have already made noteworthy achievement in their chosen field. We congratulate the Union Pacific officials who have continued this program." Similar statements have been made by college officials and 4-H club leaders throughout the eleven states served by the railroad.

J. W. Jarvis, winner of the first vocational agricultural award in Malheur county, Oregon, in 1926, is today supervisor of agricultural development of the Union Pacific and Harold W. Benn, a 4-H club scholarship winner, from Valley county, Nebraska, in 1931, is a Union Pacific agricultural agent at Omaha, Neb.

Freight Car Loading

Loadings of revenue freight for the week ended September 8 totaled 730,628 cars, the Association of American Railroads announced on September 13. This was a decrease of 129,811 cars or 15.1 per cent below the preceding week (due to the Labor Day holiday), a decrease of 94,538 cars or 11.5 per cent below the corresponding week last year, and a decrease of 104,042 cars or 12.5 per cent below the comparable 1943 week.

Loading of revenue freight for the week ended September 1 totaled 860,439 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Weed Ended Saturday, September 1

District	1945	1944	1943
Eastern	157,168	166,465	172,181
Allegheny	181,015	199,371	195,766
Pocahontas	54,992	56,060	56,135
Southern	119,241	120,894	120,193
Northwestern	143,856	143,631	151,364
Central Western	141,428	138,484	131,519
Southwestern	62,739	72,698	73,917
Total Western Districts	348,023	354,813	356,800
Total All Roads	860,439	897,603	901,075
Commodities			
Grain and grain products	66,255	47,862	54,277
Live stock	17,455	16,840	17,596
Coal	179,264	173,638	177,212
Coke	12,411	13,851	14,713
Forest products	45,281	47,423	47,442
Ore	70,959	76,219	89,342
Merchandise l.c.l.	105,114	109,566	101,889
Miscellaneous	363,700	412,204	398,604
September 1	860,439	897,603	901,075
August 25	853,426	904,871	904,057
August 18	652,832	886,623	891,340
August 11	870,007	895,181	887,164
August 4	863,910	889,594	872,133
Cumulative Total, 35 Weeks	28,740,825	29,218,903	28,242,474

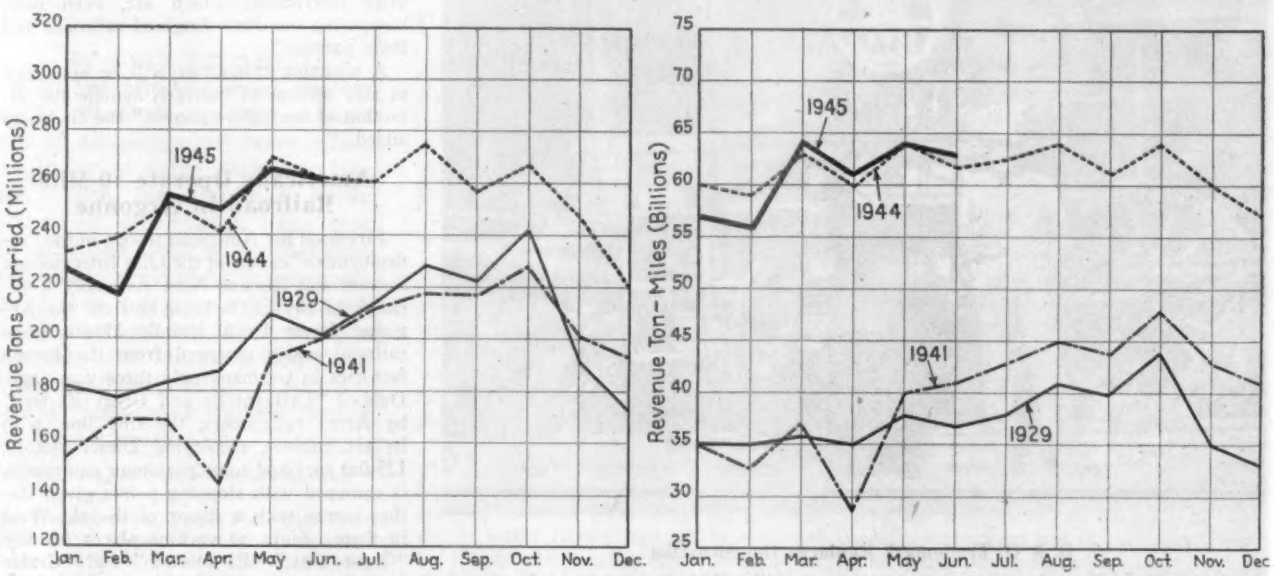
In Canada.—Carloadings for the week ended September 1 totaled 76,044 as compared with 74,329 for the previous week and 73,292 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Totals in Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
September 1, 1945	76,044	32,664
September 2, 1944	73,292	37,713
Cumulative Totals in Canada:		
September 1, 1945	2,403,378	1,264,146
September 2, 1944	2,434,738	1,347,017

722nd Boasts of Youngest Engine Crew in E. T. O.

Credit for the youngest engine crew in the European Theater of Operations is claimed by the Seaboard-sponsored 722nd Railway Operating Battalion, Transportation Corps headquarters in Paris reports.

On the continent since August, 1944, and



Revenue Tons and Revenue Ton-Miles—1945 Compared with 1929, 1941 and 1944

with four battle campaigns and an "excellent safety record" to its credit, the crew is identified as Cpl. Donald J. Lipke, of Chicago, 21-year-old engineer, who before entry into the Army worked as fireman for the Pennsylvania, and Cpl. Melio A. Pupo, of Chester, Pa., 20-year-old fireman, who had his railroad beginnings as a brakeman on the Pennsylvania.

Transcontinental Air Freight Service Inaugurated

Regular all-freight transcontinental air services were inaugurated at Fresno, Cal., at 11:00 a.m. on September 5, with the departure of a twin-engined cargo plane for Milwaukee with a shipment of 6,000 lb. of strawberries and 2,000 lb. of cantaloupes. The plane is owned by the National Skyway Freight Corporation, a company formed by former members of the "Flying Tigers," air combat group in the early phases of the Asiatic war. A second plane left for New York at 9:00 p.m. with 8,000 lb. of grapes. This flight was delayed in order to provide arrival in New York for Friday morning's (September 7) market.

Other air-freight developments of that day were the departure of an air cargo of 8,000 baby chicks from Joliet, Ill., for Taranza, Cal., and an announcement of a proposed air-express service in the West. The chicks were transported in the specially equipped plane of their purchaser, who stated that it was his intention to make two such shipments each week. In Dayton, Ohio, a group of Army Air Force officers announced that they had applied to the Civil Aeronautics Authority for permission to inaugurate six air mail and express lines in the three Pacific Coast states. It is their plan to operate an aerial pick-up service similar to that of the Army Air Forces, by which they can take a 250-lb. load aboard a plane without landing.

Controllers Institute Announces Election Results

Three railway officers have been named directors of their local controllers' groups, the Controllers Institute of America has announced. These include: In New York, E. A. Clancy, comptroller, New York Central; in St. Louis, J. R. Ford, secretary and treasurer of the Alton & Southern; and in St. Paul, J. A. Taub, assistant comptroller of the Great Northern.

At the annual meeting of the Institute's Chicago "control," Grant E. Chessman, comptroller of the Elgin, Joliet & Eastern, was elected secretary.

John V. Bowser, comptroller of the Westinghouse Air Brake Company, has been elected vice-president of the Pittsburgh "control."

British Railways Only Gradually Assuming Normalcy

Besieged with inquiries as to present and prospective plans of the British railways, T. D. Slattery, general traffic manager in New York, for the Associated British & Irish Railways, recently declared that "for some considerable time" the movement of war traffic in Great Britain will continue heavy, but that services will be restored to their pre-war standard "as quickly as possible." While cessation of hostilities in Europe brought about the lifting of certain restrictions in the operation of passenger trains, extra trains have been permitted only after military food and similar requirements have been met, Mr. Slattery explained.

Profoundly affecting present-day transport, he said, is the serious man-power shortage, the scarcity of materials and the accumulated deferred maintenance in the railways' plant. With practically no new passenger cars being built during the war, and with nearly 25 per cent of the existing supply now in the shops awaiting repairs by staffs short of about 8,000 men, the railways are further handicapped by a shortage of motive power, at least 20 per cent of their heavy locomotives now undergoing or awaiting repair.

Determined to "regain and surpass their former high degree of efficiency," the railways are planning large-scale construction of locomotives, and passenger cars with "more comfortable and more attractive fittings, improved lighting and better buffet, dining and sleeping facilities," Mr. Slattery said. Stations, too, will be renovated or modernized, with special consideration being given to refreshment and waiting rooms and to the "provision of more spacious circulating areas."

Meantime, Labor Party politicians are proceeding with their plans to socialize these companies which have given such efficient service under private management.

An "Atomic" Locomotive?

Ralph Lucas of the United States Industrial Research & Development Co. of Elmira, N. Y., on September 11, told reporters for the daily newspapers at Newark, N. J., that laboratory tests he had made had succeeded in releasing atomic energy from mercury in a manner adaptable for use as a source of energy for locomotive propulsion; and that the New York Central had expressed an interest in his experiments. He added that he expected to have N. Y. C. cooperation, enabling him to install his mechanism in a locomotive of that company for test purposes. The railroad has neither confirmed nor denied this report, declining at this time to make a statement of its negotiations with Mr. Lucas, if any.

5th A.M. Truck Service—St. Louis to California

Fifth morning freight delivery in both directions between St. Louis, Mo., and Los Angeles, Cal., and San Francisco, was established on September 5, by the Pacific Intermountain Express, a truck line operating from St. Louis to California, via Kansas City, Mo.; Pueblo, Colo., Colorado Springs and Denver; and Salt Lake City, Utah, and Ogden.

According to a spokesman for the company, Pacific Intermountain has acquired operating rights between Chicago and Kansas City and expects to begin operations into Chicago about October 1. While final schedules on Chicago traffic have not yet been determined, it is expected that fifth morning delivery will also be provided for this business.

Pre-war rail freight schedules provided for fifth morning delivery from St. Louis, with sixth morning from Chicago. Present operations, slowed by heavy war traffic, are two days longer than those in effect prior to the war.

Wage Demands Are Being Actively Pushed

Developments in the maintenance of way employees case, first of the general wage-increase movements to get under way, have now reached a point where the Brotherhood of Maintenance of Way Employees is seeking to take the negotiations off the individual railroads and join them in a general proceeding for "national handling." As noted in the *Railway Age* of July 7, page 42, the brotherhood is demanding for its members uniform country-wide scales brought about by increases for all classes of employees involved, a minimum wage of 75 cents per hour, and changes in working rules to provide paid sick leaves, travel-time pay, and expense allowances for away-from-home assignments.

Negotiations on the individual railroads have been going on for some time, and regional committees of the carriers are now being pressed to go along on the brotherhood's demand for national conferences. A like development is taking shape in connection with the demands of the train-service brotherhoods for an increase of $2.50 per "day" and various changes in working rules. There, too, the negotiations with individual roads are understood to have been "completed" so far as the unions are concerned, and application of pressure for "national" handling awaits only consideration of the brotherhood representatives' reports on the individual negotiations.

Meanwhile the American Train Dispatchers Association has completed a referendum of its members on whether to go after a six-hour day with no reduction in wages or a general wage increase. Results of this referendum are expected to be made known shortly. Finally, the Brotherhood of Railway Clerks was expected to make an early wage-increase demand.

The Shopcrafts' general chairmen had a meeting scheduled for Chicago this week.

"Liberation" Locomotives—a Correction

In the description of the "Liberation" locomotives for France which appeared on page 401 of the September 8 *Railway Age* mention was made of the inclusion of two syphons in the firebox. Omission of this item from the partial list of specialties failed to identify these as Nicholson Thermic Syphons manufactured by the Locomotive Firebox Company.

Club Meetings

"The Coming Passenger Train Equipment" will be discussed by Col. E. J. W. Ragsdale, chief engineer, railway division, Edward G. Budd Manufacturing Company, when the New York City chapter of Railroad Enthusiasts, Inc., next meets, at 8 p.m., September 26, in Room 5930, Grand Central terminal.

With the Government Agencies

Return of Troops Is Approaching a Peak

All men to be back from Europe by February, from Pacific by next June

Barring unexpected developments, all American soldiers now in Europe, except those making up the Army of Occupation and certain men concerned with the disposal there of surplus Army property, will have been returned to the United States by February, 1946, according to a September 10 statement by Major General Charles P. Gross, chief of transportation, giving the revised "target dates" now set for the ocean-crossing phases of demobilization.

The estimated time for completing the return to this country of American forces now in the Pacific, again excepting men scheduled to remain for post-war duty, is now next June, the same statement indicated. More than 1,750,000 men are now in line for return from the Pacific theaters, and about 2,000,000 from Europe. In addition, there are about 150,000 other troops to be returned from miscellaneous overseas points. Up to August 31, since V-E Day, 1,110,000 troops have been brought back from European and other Atlantic theaters, while the total returned from all theaters was about 1,225,000.

Peak Still to Come—Around the end of the year the peak load of more than 500,000 men returning per month will be reached, according to General Gross, who explained why the rate of return from points in the Pacific will be much slower than from Europe, although about 73 per cent of the 1,700 ships which the Transportation Corps controls are now in the Pacific, including most of the faster transports.

"Despite the greater number of troop arrivals," the statement continued, "return of Army troops is not expected to increase the burden on domestic carriers beyond the predicted peak load of 1,000,000 troops or more moving in organized groups in each of the four months following this October. Diversion of ships from the Pacific through the Panama Canal to East and Gulf coast ports, and increased use of air transport within the United States, will minimize the burden on transcontinental rails.

"With rapid demobilization, the number of rail trips per man will be sharply reduced," it went on to say. "From five to seven moves were required under the redeployment program to take troops from ports to disposition centers, reception stations, home on furlough, and back again, to assembly areas for training, then to West coast staging areas and ports of embarkation. Now troops being demobilized will, within a period of 24 to 72 hours, move through the Transportation Corps' ports and disposition centers to 27 separation centers scattered all over the country. Another major source of relief for the railroads already has resulted from the sharp reduction in Army cargo shipments."

Bringing up to the end of July aggregate figures on the railroads' part in handling the movement of troops since Pearl Harbor, the statement indicated that 31,706,715 troops have been carried by rail and 765,541 by bus in organized movements.

O. D. T.'s Highway Department Offices to Close

All district offices of the Office of Defense Transportation's Highway Transport Department will be closed on or before November 1, according to a September 10 announcement. Five offices will be closed October 15, and the remaining 53 on November 1. Closing of 48 district and field offices on or before September 22 was previously announced by Director Guy A. Richardson of the Highway Transport Department.

Johnson Orders Return of T. P. & W. on October 1

The Toledo, Peoria & Western will be returned to its owners at 12:01 a.m. on October 1 according to an order terminating government control which was issued September 6 by Director J. Monroe Johnson of the Office of Defense Transportation, with the approval of Director William H. Davis of the Office of Economic Stabilization.

The road has been operated by O. D. T. since it was taken over by the government on March 22, 1942, when the employees were on strike in protest against the management's undertaking to eliminate "featherbedding" from their working rules. The O. D. T. announcement of Director Johnson's termination-of-control order said that the labor dispute "remains unsettled."

Equipment Depreciation Rates for D. L. & W.

Equipment depreciation rates for the Delaware, Lackawanna & Western are among those prescribed by the Interstate Commerce Commission in a new series of sub-orders in the general proceeding, Depreciation Rates for Equipment of Steam Railroad Companies. The total ledger value of D. L. & W. equipment is given as $80,181,061, while the ledger value of leased equipment is $2,664,761.

The prescribed depreciation rates are: Steam locomotives, 3.13 per cent; Diesel-electric road locomotives, 4.8 per cent; Diesel-electric yard locomotives, 3.77 per cent; freight-train cars, 3 per cent; passenger-train cars, 2.6 per cent; floating equipment, 2.76 per cent; floating equipment, leased, 2.28 per cent; work equipment, 4 per cent; miscellaneous equipment, 11.36 per cent.

Johnson Warns RRs to Improve Plant

Otherwise, they'll have tough time matching appeal of rival services

Unless the railroads keep pace with their highway and airway competitors by providing increasingly-attractive services with ever-improving equipment and facilities of types now "undreamed of," they are in for an "unhappy existence" in the opinion of Director J. Monroe Johnson of the Office of Defense Transportation who also believes that an unhappy existence for the railroads would mean an unhappy existence for the nation, too. Railroads, he said in an address this week, are "an absolute necessity no matter what may come in other lines of transportation."

Colonel Johnson spoke at a September 11 dinner meeting of the Women's Traffic Association of Washington. He was not pessimistic about the transportation outlook, being confident that a people which solved its wartime transportation problems in a "brilliant way" will apply like talent to postwar problems. Most of the O. D. T. director's address was a highlight review of the wartime achievements of domestic transportation agencies.

The job done by the "magnificent" railroads and their allies, the trucks, he said, was due in no small part to the cooperation of shippers and, indeed, all persons remotely related to transportation. It was done because all interests "forgot their rivalries." Among other things, Colonel Johnson recalled the work of the Regional Shippers Advisory Boards and their vigilance committees which made a man "unpopular in his community" if he held a box car "one minute longer than was necessary."

He also recalled—and it seemed to him "years ago"—how J. J. Pelley, president of the Association of American Railroads, and Harold L. Ickes, petroleum administrator for war, had "pulled each other's hair" before a Congressional committee, with Mr. Ickes calling Mr. Pelley a "dirty liar" when the A. A. R. president insisted that the railroads could deliver 200,000 barrels of oil a day on the Eastern seaboard. Yet they delivered 1,000,000 barrels a day, Colonel Johnson went on.

He also contrasted the liquidity of the ports in this war with the congested conditions in World War I, saying that this time the determination to permit no storage of freight in railroad cars was carried out. Save for the period of last winter's freeze in the Great Lakes area, there has been no congestion in transportation during the war, the O. D. T. director said—not only

(Continued on page 457)

Defends W. S. A. Plan for Water Operations

Land says railroad objections are reflection of "narrow point of view"

When this issue went to press, the Interstate Commerce Commission was scheduled to hear oral argument Thursday, September 13, on the War Shipping Administration's application. The hearing notice was issued on the 11th, and the case is docketed as W-926 (Sub No. 1 TA).

Responding to objections raised by the Association of American Railroads to the War Shipping Administration's application for temporary authority to engage in water-carrier operations on coastwise and intercoastal routes, W.S.A. Administrator E. S. Land has told Interstate Commerce Commission Chairman John L. Rogers that it is a matter of "deep regret" to him that "at the very first opportunity following the close of hostilities the railroads have adopted a narrow point of view reminiscent of the 'dog-eat-dog' philosophy which so adversely affected their own interests as well as those of the water carriers during pre-war days." The A.A.R. protest against W.S.A. application was noted in the *Railway Age* of September 8, page 419.

RRs Ungracious—It took the form of a letter from A.A.R. President J. J. Pelley to I.C.C. Chairman Rogers. Admiral Land said he had not seen the Pelley letter when he prepared his response, but he had been advised by the W.S.A.'s general counsel (William Radner) that "the opposition appears to be founded primarily on the assumption that there is no immediate and urgent need" for the water services proposed. Admiral Land thus addressed himself to this general proposition while Mr. Radner in another letter to Mr. Rogers covered "certain of the matters of a legal nature" raised by the A.A.R.

In his undertaking to set forth "some of the broad considerations" involved, Admiral Land emphasized first the nation's dependence on the "unsubsidized" domestic coastwise and intercoastal trades for the bulk of its "national defense shipping reserves." He then noted how these domestic shipping resources were "drafted for war service." The domestic business of the companies, he went on, "was completely disrupted, interior offices were abandoned, traffic departments were discontinued, soliciting of cargo and trade contracts ceased and their transportation business was transferred to the rails."

In view of their contribution to the war effort, Admiral Land feels that the domestic steamship companies and their employees are entitled to treatment comparable to that being given returning service men. "They should be rehabilitated, have their trade back, their jobs back, and an opportunity for future progress," he said. Railroad objections to such a policy "come with bad grace," Admiral Land added.

RRs Throve on Misfortune—"The rails," he continued, "were not asked to abandon their business to competing transportation. They benefitted by the misfortunes of the water carriers. They maintained their staffs and their traffic departments and they increased their trade contacts. According to 1944 O.P.A. studies, their net income rose 1,700 per cent during the war period. Without reflecting on the fine job performed by the rails, their position in this case seems merely to represent an effort to retain a wartime windfall based on the misfortunes of their competitors."

The need for W.S.A. operations is "urgent and immediate," Admiral Land insisted—from the standpoints of both the shipping industry and its employees and the shippers. In the former connection, he asserted that the cessation of hostilities has confronted the country with "a serious crisis of idle ships and idle men"; and "early and orderly resumption of intercoastal services will help cushion the shock . . . and promote the national reconversion policies." With respect to the shippers, the admiral thinks they should again be given "the lower costs and other benefits of water transportation."

He found it "of no significance" that the railroads may have physical equipment to handle the business, "which is not conceded." W.S.A., he added, now has "sufficient vessels to handle *all* transcontinental cargo by water," yet it "does not suggest because of this fact that the continuation of railroad transportation is no longer essential." It rather believes that "under our national economy *both* forms of transportation are essential."

Temporary Socialism—W.S.A.'s proposed operation, as Admiral Land put it, "contemplates an orderly return to private operation—it does not contemplate indefinite government operation." Meanwhile however, W.S.A. anticipates that "a full resumption of regular intercoastal service will be delayed for some period of time while necessary planning and programming for the many problems connected with the resumption of service have been solved." Also, it is conceded, as the A.A.R. said it had been informed, that the W.S.A. operations "at the outset" would be arranged for under contracts with pre-war private operators. This "temporary arrangement" is called "necessary" to aid the industry in finding a solution to many specified "difficulties."

Some of the difficulties appear to be of pre-war variety, for mention is made of the "financial anemia" suffered by the industry for several years. That illness is attributed "to some extent" to the "depressed and non-compensatory freight rates established by the rails in section 4 proceedings." These "depressants," Admiral Land asserted "must be removed by cooperative action of both the rails and water carriers." Such "cooperation," he added, will expedite the return of private operation. And he warned that "the alternative is government ownership, a threat which should be as alarming to the rails as it is to me."

In closing, the admiral said that W.S.A. "will support the water carriers to the utmost in their effort to get a square deal . . . Privately owned and operated coastwise and intercoastal water transportation must be restored as a profitable industry."

Clinchfield Mines to Get Two Branches

I. C. C. allows both C. & O. and Clinchfield R. R. to build into new coal field

Both the Clinchfield and the Chesapeake & Ohio have been authorized by Division 4 of the Interstate Commerce Commission to build new lines into territory in Virginia near the Kentucky border where the Clinchfield Coal Corporation has large undeveloped coal resources. Entry of the C. & O. into this area was opposed by the Carolina, Clinchfield & Ohio and by the Atlantic Coast Line and Louisville & Nashville, which two roads are the joint lessees of its property, which the Clinchfield operates.

Control of Clinchfield Mines—Originally the stock of the C. C. & O. and the coal corporation were under common control, and a "friendly relationship" has continued to exist, as the coal company's properties are generally tributary to that line of railroad and each has been dependent on the other for traffic and transportation. About August, 1944, however, the Pittston Company acquired 63.2 per cent of the coal company's outstanding stock. The Alleghany Corporation, which controls the C. & O. with I.C.C. approval, and the C. & O. together formerly held 76.9 per cent of the common stock of the Pittston Company, but such stock has been deposited with an independent voting trustee, and interlocking directorates have been eliminated, in compliance with the terms of the commission's order authorizing continuance of C. & O. control by Alleghany.

The new territory which the coal company is developing lies in and on both sides of a mountain known as Red Onion ridge, which lies roughly midway between the main line of the Clinchfield in the vicinity of Fremont, Va., and a branch of the C. & O.'s Big Sandy division which serves Jenkins, Ky. One mine, referred to as the Meade Fork development, will be opened on the westerly (or C. & O.) side of the ridge, and the other, the so-called Lick Fork development, on the easterly (or Clinchfield) side. Another and roughly parallel ridge lies between the Meade Fork area and the C. & O. line at Jenkins, while a third ridge, likewise more or less parallel to Red Onion ridge, lies between the Lick Fork area and the Clinchfield line at Fremont.

Extensions Proposed—According to the report by Division 4, entry of the Clinchfield into this locality had been under consideration from time to time since 1912, and the application for I.C.C. approval of construction was filed February 13, 1945, after extended negotiations with the coal company, both before and after acquisition of control by Pittston. The coal company had endeavored to arrange with the Clinchfield for service to the Meade Fork development also, and its formal request to the C. & O. for such service was made after these proposals had been rejected by the

(*Continued on page 457*)

Rails Want Pipelines Withdrawn from Use

Express strong opposition to operation as carriers of natural gas

Railroads believe that the government-owned "Big Inch" and "Little Big Inch" pipelines should be withdrawn from use and held in reserve for possible future use "in another emergency such as that which induced their original installation." Because of the threat to their coal traffic, the railroads are "definitely opposed" to any disposition of the pipelines for operation as transporters of natural gas, but they would not object to disposal for use in the transportation of petroleum and petroleum products, provided the terms of such disposal did not amount to subsidization, thus giving the pipelines "an unfair advantage over competitive transportation agencies financed by private capital."

These views of the railroad industry were expressed by J. J. Pelley, president of the Association of American Railroads, in a September 10 letter to Senator O'Mahoney (Democrat of Wyoming), chairman of the Senate's special committee investigating petroleum resources. Senator O'Mahoney had requested a statement of the railroad point of view in connection with his preparations for forthcoming hearings with respect to disposal of the government-owned pipelines, tankers, refineries, and related facilities.

The hearings will be joint sessions participated in by Senator O'Mahoney's special committee, the surplus property subcommittee of the Senate committee on military affairs, and the industrial reorganization subcommittee of the Senate special committee on postwar economic policy and planning. They are expected to begin by the end of this month or in early October, and Mr. Pelley's letter said that the railroads would make a presentation.

Three Alternatives—Thus the A. A. R. president undertook at this time to indicate the railroad industry's views "in a rather general way." The railroads see only three possible courses to take with respect to the two pipelines: Scrap them; sell or lease them to private enterprise; or withdraw them from use and hold them in reserve. As Mr. Pelley put it, "we regard those as the only courses that are practically available because we cannot conceive of serious consideration being given to any proposal that the government shall itself continue in the operation of these facilities for commercial purposes when there is no longer any emergency so requiring or justifying."

As noted above, the railroads favor the third course. While they think that ultimately scrapping may prove to be the advisable course, they believe that a final determination on that matter should be deferred "for the time being at least." Then, after indicating that the railroads would not object to unsubsidized private operation for petroleum transportation, Mr. Pelley came to his discussion of railroad objections to use of the pipelines for transportation of natural gas.

Undermining Coal—Pointing out that it was impossible to foretell all of the economic effects which might follow from the importation of natural gas into the territory service by "Big Inch" and "Little Big Inch," Mr. Pelley went on to mention how adverse such a development would be to coal mining and related industries and, through them, on the railroads.

"It would be difficult," he continued, "to overemphasize the importance of coal traffic to the railroads in the territory served by these pipelines. In normal times at least one-half of the total tonnage handled by them consists of coal, and their revenue from the transportation of coal amounts to at least one-third of their total freight revenues. The railroads have learned from bitter experience what effect the importation of gas in large volume into a given area has on their coal traffic and what effect a substantial reduction in their coal traffic has on their revenues and on their ability to avoid increases in rates on other traffic to make up for such revenue losses."

The A. A. R. president followed through in the latter connection to assert that the country's wartime experience had demonstrated not only the "indispensability" of the railroads, but also "the influence which the volume of traffic has on railroad operating costs per unit of traffic and hence on the rate level necessary to enable them to render adequate and efficient service." He noted how the industry was able to go through the war, in spite of "large" increases in wage rates and prices, with only a temporary 4.7 per cent increase in freight rates and a 10 per cent increase in passenger fares, which "have been far more than offset by reduced fares granted to furloughed members of our military forces, voluntary reductions in rates accorded the government on some of its traffic and other reductions in rates and fares accruing to the government under land-grant statutes on a large part of the enormous volume of traffic which the railroads have handled for it."

Economy of Large Volume—Also, Mr. Pelley reminded the Senator that the railroads, while handling the war traffic "at pre-war or even less than pre-war rates," have not only met "enormously" increased costs but have paid "several billions of dollars" in increased federal income taxes. "They have been able to make that showing," he added, "only because of the enormous volume of traffic that has come to them during the war. During a large part of that period they have been operating at very near their full capacity." And now they enter the post-war period "confronted with a most serious situation," as Mr. Pelley put it.

"They will start off," he went on, "under the handicap imposed by wage rates 25 per cent, and unit prices of materials and supplies about 28 per cent, higher than those in effect immediately prior to the war. They will be faced with the necessity of expending vast sums in the rehabilitation of their plant and equipment, which intensive use and shortages of materials and manpower have made it impossible for them to maintain at a proper standard during the war. In addition to all that, they will be confronted with the prospect

(*Continued on page 458*)

Excess Profits Tax Cut Possibilities

Statistics bureau's figures show effect on Class I lines' net income

Some indication of the possible benefit the railroads might derive from elimination of the federal excess profits tax is contained in a summary of a study by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission which appears in the latest issue of its "Monthly Comment on Transportation Statistics."

Reviewing the situation of 77 Class I line haul roads in the year 1943 (representing 90.3 per cent of the total gross operating income of Class I lines) this study resulted in the conclusion that their federal income taxes would have been about 32 per cent less than they actually were if there had been no excess profits tax applicable in that year. Applying this percentage ratio to the total of federal income and excess profits taxes reported for 1943 by all Class I line haul carriers, $1,335,123,475, the bureau calculated that federal taxes for this group of roads would have been reduced by $427,239,512 by elimination of the excess profits tax. This would have been equivalent to an increase of 48.9 per cent in the net income, after taxes and fixed charges, of $873,478,025 actually reported for 1943 by the Class I line haul roads.

Net Trend Downward—The bureau made no similar compilation on the basis of 1944 figures, nor did it offer any forecast of the effect on railroad taxes of tax adjustment legislation passed this year. It did point out, however, that the 1944 net income of Class I roads was more than $200,000,000 less (that is, $667,188,402) than in 1943, and that the net for 1945 "may be" lower than in 1944. Federal income taxes reported by the Class I line haul roads for the first half of this year (the reported net income being $326,801,745) were $602,487,212, compared to $643,896,749 in the same period in 1944 (when the reported net income was $323,623,324).

The current position of the Class I roads, as of June 30, was summarized at the same time, showing an increase of 2.9 per cent in total current assets as compared with the same 1944 date and a 0.5 per cent increase in total current liabilities. At the close of the first half of this year, therefore, the net working capital position of these railroads had improved to the extent of about $115 million over the same time last year, and by almost 1½ billion dollars over the equivalent 1940 period.

Still another review of the Class I line haul roads' financial position was made in the bureau's study of earnings on capital stock in the past 10 fiscal years ended June 30. For each $100 of outstanding capital stock net income after taxes and charges varied from the deficits reported in 1938 and 1939 to a high of $13.50 in the year ended June 30, 1943, the figure for 1945 being $8.43, or less than one dollar above 1942's $7.79.

The regular monthly review of railroad operating results showed that the freight

revenue of the Class I roads in July, on a daily basis, was 3.5 per cent lower than for June and 0.7 per cent under July, 1944. The freight revenue index (based on the 1935-1939 monthly average as 100) was 226.9, which is lower than any month since February. The index for April (the high since 1943) was 236.4, for May 233.3, and for June 235.2.

Passenger Revenue Falls—July passenger revenue on a daily basis was 4.1 per cent less than June and 7.1 per cent less than for July, 1944. The passenger revenue index at 430.4 compared to 449.0 for June, 396.7 for May, and 381.2 for April.

In view of the unprecedented freight and passenger traffic on the western transcontinental lines—the Santa Fe, Milwaukee, Great Northern, Northern Pacific, Southern Pacific, Union Pacific and Western Pacific—the comment includes a chart comparing the recent record of these lines as compared with past performance. While gross ton-mile data were not available for the World War I period, results for this group of roads were indicated beginning with 1919. Prior to 1941, the 215.8 billion reported in 1929 was the record figure, the low being 126.5 billion gross ton-miles in 1932. Each year since 1940, however, these roads' gross ton-miles have been higher than the preceding year and higher than the previous record. In 1944 the total was 390.2 billion, more than three times the 1932 low and 80.8 per cent higher than the 1939 peak. The total for the first half of 1945 was slightly ahead of the corresponding 1944 figure.

Nine Times '33 Traffic—A similar comparison of passenger-miles data for the transcontinental lines was carried back to 1914 to cover World War I. The peak load for that era, however, was made after the end of the war, in 1920, when the total was 8,359 million passenger-miles, or 39.7 per cent above the pre-World War I year 1914. The depression low, made in 1933, was 2,538 million. In 1939 the total was 4,458 million, from which the increase to the 23,499 million reported in 1944 was 427.1 per cent. The 1944 volume of passenger business thus was almost three times the 1920 record and more than nine and a quarter times the low point of the depression era. In 1945 the combined monthly totals for the seven roads were running somewhat behind the comparable 1944 figures.

The bureau's regular forecast of freight traffic has been modified to reflect conditions resulting from the end of the war. For September, the forecast indicates a decrease under 1944 of 6.5 per cent in loadings of carload freight and of 2.2 per cent in l.c.l. loadings, or an over-all decrease of 5.9 per cent. Increases are predicted in grain and products and livestock, while all other classifications are expected to show a decrease.

All revenue carloadings in the five weeks ending September 29 are estimated as averaging 833,000 cars per week, an increase of about 23,000 cars from the 810,044 cars averaged in the four weeks ended August 25. "In normal times there would be a seasonal increase of at least this amount between August and September," the bureau pointed out, "even with Labor Day observance in September. However, this year the indicated increase is due in large part to Victory holidays in the week ending August 18, when carloadings dropped almost as low as during the war-time Christmas periods."

Car Supply Still Tight—While a decline of 25.9 per cent for petroleum and products loaded in tank cars is forecast for September, as compared to that month last year, in view of the fact that "movement of petroleum by rail and tanker is expected to approach its pre-war pattern during September," the forecast points out that the largest commodity decrease in terms of carloadings is expected in the "other miscellaneous" category, which is not regarded as surprising in the light of the cessation of hostilities. It is expected that the demand for all types of equipment except stock cars should be down from last year, but an increase over the need indicated in August is expected for box, refrigerator, stock, open-top hopper, and gondola cars.

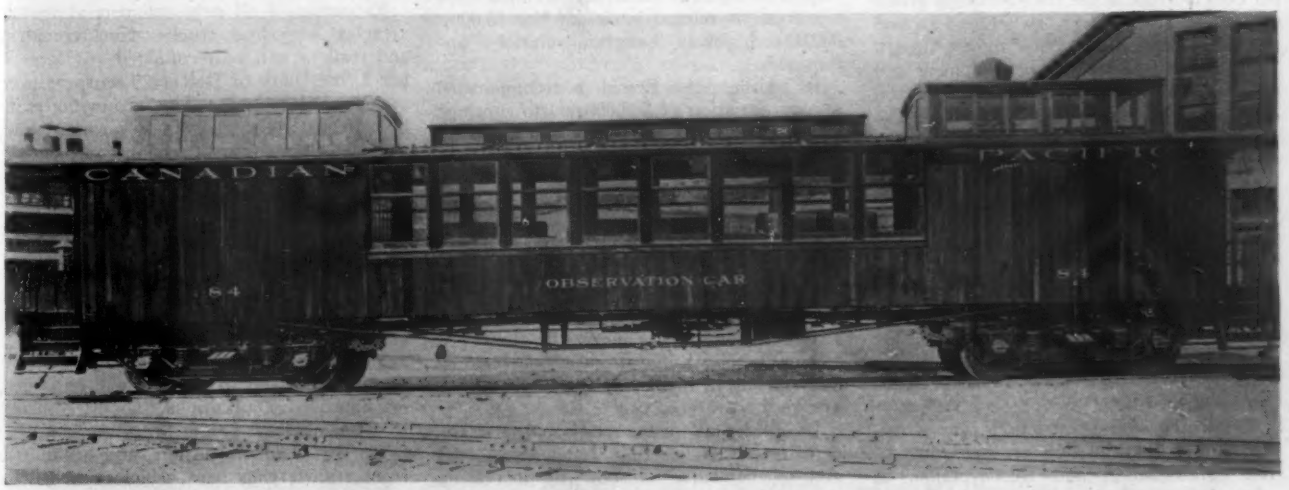
Looking ahead, the bureau forecast a total of 17,819,866 revenue carloadings for the second half of this year, a decrease of 8.2 per cent under the same period last year, and estimated that loadings in January and February, 1946, should be 10.5 per cent below the same months in 1945. Remarking that these figures indicate a level of traffic considerably below war-time peaks but well above pre-war loadings, the comment notes that carloadings are not expected to decrease as much, relatively, as either ton-miles or tons of freight originated, as reconversion takes place, due both to the change in the consist of war-time and peace-time traffic and to a "general relaxation" of heavy loading of cars.

Month by month comparisons of the bureau's forecasts with actual loadings in the previous year, for carload freight only, show the following expected percentage decreases: September, 6.5; October, 9.4; November, 11.0; December, 9.7; January, 10.9; and February, 13.1.

Diesels in Yard Service—Proceeding further with its study of the use of Diesel-electric locomotives, the bureau gave more recent figures on yard switching operations than were included in its previous survey (reported in *Railway Age* of August 14, page 261). While Diesels accounted for 8.19 per cent of the total yard switching locomotive hours in the first half of 1940, their percentage in the same 1945 period was 23.27. In the same time, the hours of coal-burning yard locomotives decreased from 80.23 per cent to 65.49 per cent. Other types of yard power, including oil-burning steam, showed little change on a percentage basis. Reflecting the increase in yard work in the first half of 1945, as compared to the same period in 1940, the total service hours for Diesel-powered units had increased more than 400 per cent, while the total increase for all steam-powered units was about 26 per cent. In the first half of 1945, the average number of hours per locomotive-day was 11.1 for all steam locomotives in yard service, as compared to 19.0 hours for Diesel-electric locomotives.

In contrast to the less favorable relative changes in freight service revenues and expenses in 1944 as compared to 1940, as noted in the August 14 issue, page 261, the bureau comments that, as a result of the enormous volume of war-time travel, including troop movements, passenger service revenues increased, between the years named, 254.1 per cent, while passenger ex-

* * *



Photograph from W. A. Lucas

This Double-Cupola Observation Car Was Used on the Canadian Pacific About 35 Years Ago

penses increased 95.7 per cent. Car-mile revenue rose 128.4 per cent, from $.211 to $.482, while the related expense increased only 26.6 per cent, from $.259 to $.328, it being noted that in 1940 the expense exceeded the revenue.

W. P. B.'s Construction Order Further Relaxed

War Production Board controls covering the construction of transportation facilities and alterations and repairs to existing buildings are among those removed in a further relaxation of the general construction order, L-41, announced last week. At the same time, W. P. B. revoked order L-41-e which had limited highway construction.

Transportation facilities now permitted to be built without authorization include railroad tracks, stations, shops and bridges, airports or airway facilities, bus and truck terminals, and pipelines. The relaxation of controls on alterations and repairs means that such work not involving exterior additions may be done without authorization, regardless of the type of work or cost. Alterations were formerly considered as new construction and were subject to the same limitations. The relaxation also permits the rebuilding of structures damaged by fire, flood, tornado, etc., on or after April 9, 1942.

August Employment 0.13 Per Cent Below Previous Month

Railroad employment declined 0.13 per cent—from 1,451,200 to 1,449,293—during the one-month period from mid-July to mid-August, but the August total was 0.01 per cent above that of August, 1944, according to the preliminary summary based on reports from Class I line-haul roads and prepared by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. The index number, based on the 1935-39 average as 100, was 139.1 for August, the same as that for August, 1944. The July, 1945, index was 139.2.

August employment was below that of the previous month in four groups, while three groups showed increases. All changes were less than 1 per cent except the 1.04 per cent increase in the transportation group embracing yardmasters, switchtenders and hostlers. All groups were above August, 1944, except maintenance of equipment and stores (down 1.1 per cent) and train and engine service (down 0.05 per cent). The range of the increases was from 2.76 per cent for executives, officials, and staff assistants to 0.24 per cent for the maintenance of way and structures group.

Convention Ban Off October 1

The ban on conventions, group meetings and trade shows will be removed October 1, Col. J. Monroe Johnson, chairman of the War Committee on Conventions and director of the Office of Defense Transportation, has announced.

The lifting of the restrictions was scheduled on recommendation of the Office of War Mobilization and Reconversion, at whose instance they were imposed, effective February 1, 1945. Until August 17, authorization of the committee was required for holding of any meeting of non-local character or with more than 50 non-local participants. A recent liberalization increased the attendance limit to 150 persons and permitted state-wide gatherings of any size.

Colonel Johnson expressed his thanks to the convention and trade groups and to the nation's hotels for their cooperation during the period the restrictions have been in effect. Pointing out that the scheduled lifting of the ban is not an invitation to travel, "nor can it be considered an assurance that transportation capacity will be available," he asked sponsors of conventions, group meetings and trade shows to defer meetings whenever possible and to keep necessary meetings small until after the peak of the troop movement, which will come early next year.

Authorizes C. N. J. to Restore Suburban Trains

The Central of New Jersey has been authorized by the Office of Defense Transportation to restore 68 suburban commuter passenger trains between New Jersey points and New York City, the trains having been discontinued under provisions of Special Order ODT R-7, issued February 24, 1944 and in effect since March 12, 1944. The order is now revoked.

Suspension of the trains, almost all operated in the Jersey City-Newark-Elizabethport triangle, was made necessary by the interference of commuter service with the Jersey Central's heavy war-time freight traffic in and out of the New York port area and the Northern New Jersey industrial area, O. D. T. recalled.

President's Message Long on Public Works Proposals

President Truman's September 6 message to the reconvened Congress contained a "Public Works" section which called for new federal expenditures on highways, rivers, and airports. In the latter connection, the President recommended legislation to "implement" the Civil Aeronautics Authority's recommended 10-year program for the construction of some 3,000 airports and the improvement of a like number of existing ports; while the recommendation with respect to highway construction called upon Congress to release funds for the $3,000,000,000 highway program already authorized.

In addition, the President recommended an appropriation of $25,000,000 to continue construction of the Inter-American highway "through the Central American republics to the Canal Zone." With respect to river improvements, the message asserted that the country "must harness our streams for the general welfare," making them "vehicles of commerce, beneficial producers of cheap electric power, and servants of the nation instead of instruments of destruction." The President hopes that Congress "will proceed as rapidly as possible to authorize regional development of the natural resources of our great river valleys."

In other parts of the message, the President recommended Fair Labor Standards Act amendments "substantially increasing the minimum wage," and called for "full employment" legislation. He also repeated his recommendation for legislation placing the Fair Employment Practice Committee on a permanent basis. Another repeater was the President's request for permanent and unrestricted authority to reorganize government agencies.

Army Holds Down Demurrage

According to a War Department statement last week, demurrage charges accrued during July on 57,464 cars of freight handled by 22 Army Service Forces and Quartermaster depots amounted to less than three cents per car. Of the 38,263 carloads handled by A. S. F. depots, 74 per cent were released within 24 hours and an additional 23 per cent before the expiration of 48 hours, leaving 3 per cent detained beyond the free time period, on which accrued demurrage charges totaled $840.

During the month Quartermaster depots handled 19,201 carloads of freight, it was stated. Of this total, 82 per cent were released within 24 hours, and an additional 17 per cent before the expiration of 48 hours, leaving only one per cent detained beyond the free time period, on which accrued demurrage charges amounted to $229, all of this being at a single depot.

Kelly Leaves O. D. T.

H. H. Kelly, who had been director of the Office of Defense Transportation's Division of Materials and Equipment since February, 1943, resigned from that position effective September 7. Carroll Brown, assistant director of the division since February, 1942, has been appointed acting director.

Mr. Kelly will remain in Washington as representative there of the Provisional Organization for European Inland Transport, a position which he assumed on September 8. As the O. D. T. announcement put it, that Organization is an international body, the principal activities of which are "to assist in the rehabilitation of western European transport by rail, highway and water; to coordinate the efforts of the military authorities and the various governments concerned; and to assure equitable allocations of equipment and supplies."

Rationing of Trucks Will End December 1

Rationing of all new commercial motor vehicles, including trucks, truck-tractors, and trailers will be terminated on December 1, the Office of Defense Transportation announced last week. The termination will be effected through the revocation and periodic elimination of various sections of General Order ODT-44A and Administrative Order ODT-27A.

Effective September 22, persons desiring to obtain new commercial motor vehicles will no longer be required to file an application with O. D. T. Effective October 1, O. D. T. will no longer issue certificates of transfer covering new commercial motor vehicles, but during the September 22-30 period certificates of transfer will be issued on approved applications submitted prior to September 22.

During October, dealers are prohibited from transferring new vehicles except to holders of valid certificates of transfer. During November, dealers are required to

give preference in delivery to holders of valid certificates of transfer who have placed firm orders before October 31. Dealers may, during November, deliver vehicles to any person not a holder of a certificate of transfer, provided they have not made commitments to a holder of such a certificate who shall have placed a firm order prior to November 1. All certificates of transfer, which will not expire until a date subsequent to November 30, shall cease to be of any force or effect on and after December 1.

Clinchfield Mines to Get Two Branches

(*Continued from page 453*)

Clinchfield, although such a project had been under study by the C. & O. for some time. The C. & O. filed its application for I.C.C. authority to build its extension on February 24, offering no objection to the Clinchfield's proposed extension. In Commission proceedings the Clinchfield's position developed as follows, the report indicated: (1) It should be considered whether the C. & O.'s direct service to the coal company would violate the commodities clause, in view of Pittston's control; (2) the entire Red Onion ridge area is naturally and economically tributary to the Clinchfield line, the C. & O.'s territory being west of the next westerly parallel ridge; (3) construction of two lines into the area is not justified by the available tonnage; (4) the coal produced there should move to, and be reserved for, southeastern markets, which will be prejudiced if such coal is sold in northern markets; and (5) if the coal is to be sold in northern markets, an efficient and economical route is available by the Clinchfield's connection with the C. & O. at Elkhorn City, Ky., the most efficient way to develop the coal being through a single mine at Lick Fork.

The coal company asserted that no duplication of facilities could be said to exist where its development costs would be several million dollars greater if only the Clinchfield project were authorized, and that the question of invasion of territory could not properly be raised where each line is to be of similar length and cost, to serve territory devoid of rail service, and to reach a mine exclusively local to it.

C. & O. Position—The position of the C. & O. was set forth in the report thus: (1) Its proposed line would traverse territory with an enormous volume of recoverable coal; (2) a responsible potential producer of a substantial volume of coal has asked for C. & O. service; (3) the territory is naturally tributary to its lines and the coal to be produced would move to markets it serves; (4) other public needs for rail service would be met by the construction; and (5) the expected volume of traffic more than justifies the expenditure.

Reviewing these arguments, the division reached the conclusion that the commodities clause provisions did not appear to bar the entry of the C. & O., as the voting trust arrangement for control of Pittston made it impossible for the C. & O. to make the coal company a "mere instrumentality or agency of the railroad," which relationship it sees as the illegal situation contemplated in that legislation.

From the standpoint of public interest, it then made the following finding: (1) Each road will serve a separately operated mine in an area that may be taken as the division between the tributary zones of the two carriers, as well as serving intermediate tributary coal areas; (2) the C. & O. line will serve communities now without railroad connections, and which the Clinchfield line would not benefit; (3) the coal handled by each line will move to markets each normally serves; (4) the coal company asking service by both lines is an important and financially able producer; (5) the two lines are fairly comparable as to costs and operating characteristics, and will be justified by the available tonnage; (6) coal reserves available for movement over the Clinchfield to southeastern markets are adequate for any foreseeable future needs; and (7) the Clinchfield alone could not render service for the Meade Fork development equal to that the C. & O. will provide, nor to other areas to which the C. & O. extension will afford rail service.

More War Demurrage Charges Off; Other Service Orders

Increased demurrage charges on box and flat cars held beyond tariff free time, made effective by Interstate Commerce Commission Service Orders Nos. 242-B and 113, respectively, have been discontinued. The commission's action with respect to box cars was a suspension until further order, made by Amendment No. 2 and effective September 6. The order will expire without further action on October 1. The charges on flat cars were set aside by Service Order No. 113-A, effective September 7.

Provisions of Service Order No. 312 with respect to free time on freight transhipped at Gulf ports have been modified by Amendment No. 1, effective September 6, which exempts coal and coke from the requirements of the order.

A number of general permits have been issued under Revised Service Order No. 346, which establishes general restrictions on top icing of vegetables shipped in refrigerator cars from western points. Straight carloads of carrots, broccoli, or cauliflower, or mixed shipments of the latter two, billed from California points, may be initially bunker iced, under Amended General Permit No. 3, as may any shipments of fresh or green vegetables in cars less than 7 ft. inside height.

General Permit No. 4, as amended, lifts the 8,000-lb. limit on retop icing, under No. 346, for one retop icing at the following points: Chicago, St. Louis, East St. Louis, Memphis, and Decatur, Ill., and Peoria. General Permit No. 5 modifies the provisions of the order with respect to certain vegetables shipped from Colorado points, while Permit No. 6 makes further modifications with respect to shipments from Colorado of all vegetables consigned to 4 states west of the Mississippi river.

General Permit No. 7 under Revised Order 346, as effective September 6, brings about elimination of restrictions on top icing at St. Louis and points east of the Mississippi river, but leaves the prohibition of bunker icing of top iced cars still in effect.

Second Revised Service Order No. 345, effective from September 12 until October 20, provides that restrictions on the refrigeration of potatoes from the west shall now permit only the initial icing and two reicings (one west of the Mississippi and one east thereof) of shipments originating in Idaho, Utah, Arizona, and west thereof. An exception permits the second and final reicing at Clinton, Iowa, by the Chicago & North Western, at Oelwein, Iowa, by the Chicago Great Western, or at Waterloo, Iowa, by the Illinois Central when such reicing is so ordered by shippers. Potato shipments originating at points in states west of the Mississippi, other than the above, are permitted the initial icing and only one reicing—neither to use fresh bunker ice in excess of 8,000 pounds.

Also effective from September 12 until October 20 is Second Revised Service Order 346, which prohibits initial bunker icing or reicing of vegetable shipments originating in Montana, Wyoming, Colorado, New Mexico or west thereof, and the southwestern part of Texas, which have been top iced or re-top iced. More than one re-top icing is prohibited in the territory west of the Mississippi, excluding St. Louis, Mo., and Avondale, La. Exemptions lift the restriction on re-top icing at Nampa, Idaho, with respect to shipments originating at, and initially top iced at, stations in Idaho Group B or Oregon Group B; and at Los Angeles, Calif., on shipments originating on the Pacific Electric or specified Los Angeles area lines of the Southern Pacific.

Johnson Warns RRs to Improve Plant

(*Continued from page 452*)

has no port been blocked but none was threatened with congestion.

Although he pointed out that the wartime job of the domestic carriers will go on until the armed services bring back from abroad "uncounted millions" of tons and "millions" of men, Colonel Johnson noted that O. D. T. is liquidating itself as rapidly as possible. Up to the time of his talk, it had canceled more than 1,000 orders, he said.

A. C. L. Conductor Gets Medal for Heroism

Upon recommendation of the Committee on Award of Medals of Honor, approved by the Interstate Commerce Commission, President Truman has bestowed a medal of honor on James N. Royal, of Lakeland, Fla., an Atlantic Coast Line conductor. The medal was awarded under the act of February 23, 1905, which provides for bronze medals of honor in recognition of outstanding feats of bravery connected with saving of life upon railroads.

The award to Mr. Royal was based on his rescue of an unconscious man from an A. C. L. track on which a train was approaching. This occurred October 6, 1944, at Copeland, Fla.

About 8:30 p.m. on that date a crew of which Mr. Royal was conductor was engaged in placing empty cars on an industry track for loading, according to a notice by

W. P. Bartel, secretary of the commission, setting forth the circumstances. To reach this industry track a cut of about 20 cars was being backed around a curved yard track, with the conductor riding on the side sill step of the forward end of the leading car.

With the light of his electric lantern, Mr. Royal discovered an object on the track ahead which on closer approach was discovered to be a man lying with his head in the middle of the track. At this time the end of the cut of cars was only 20 to 30 ft. from the unconscious man, toward whom they were moving at a speed of 4 to 6 m.p.h. Realizing the danger, Mr. Royal jumped from the car and ran ahead on the rough and uneven track to grasp the unconscious man and drag him from the space between the rails. The approaching cars were so close, however, that the forward wheels of the leading car caught and crushed the right hand of the rescued man.

This was the fifty-sixth medal of this character awarded since the passage of the act in 1905.

Lifts Control on Transfers of Domestic Watercraft

Special permits to sell, charter, transfer or operate vessels, other than in specified trades, on the inland and coastal waters of the United States are no longer required. The permit requirement has been canceled through revocation of joint orders of the Office of Defense Transportation and War Shipping Administration. The orders (General Order ODT-40 and General Order WSA-27) had been in effect since July 2, 1942.

Rails Want Pipelines Withdrawn from Use

(*Continued from page 454*)

of a severe decline in traffic as a result of cessation of war production and a revival and intensification of motor, water and air transportation.

"To have this apparently inevitable reduction in their traffic volume further intensified by the loss of any substantial part of their coal traffic, as a result of a displacement of coal by natural gas, might well prove disastrous to the railroads in the territory involved. And the injury, of course, would not stop with the railroads. It would extend also to their employees, to the manufacturers and suppliers of railroad materials and equipment and their employees and ultimately to the public in general because of its adverse effect on both the quality of railroad service and the level of railroad rates. There is nothing that more directly affects the volume of railroad employment than does the volume of the tonnage which they are able to secure."

Foresight Is Counseled—Another matter to which Mr. Pelley thought consideration should be given is the general investigation with respect to natural gas which is now being conducted by the Federal Power Commission. He suggests that it would be useless to consider disposing of the pipeline for use in the transportation of natural gas until this investigation is completed; since F. P. C. has authority over certificates of convenience and necessity for natural gas pipelines. Finally, the A. A. R. president addressed himself to the argument that a utilization of the pipelines for natural gas would be justified as a means of retaining them in serviceable condition for possible use in case of another emergency.

To suggest this, he said, "is to disregard the serious threat which that course would entail to the maintenance in proper strength and condition of other facilities that have proven themselves of much greater importance to the nation in time of emergency. In case of another war it would be of small comfort to know that we had those pipelines available for the transportation of oil between a limited number of points if that result had been accomplished at the sacrifice of adequate railroad facilities capable of transporting not only oil but all other essential commodities between all points. In other words, to substitute the restricted service of a one-commodity carrier for the general all-commodity services afforded by rail transportation would defeat the entire purpose of assuring adequate standby transportation facilities for times of emergency."

Rates on Armor Plate Cut and Reparations Awarded

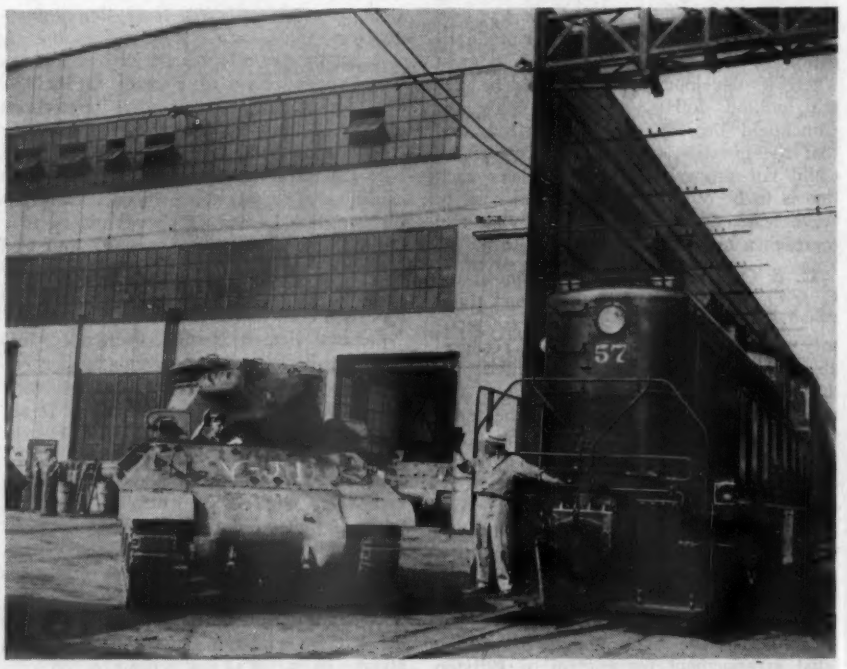
Armor-plate rates assailed by the Navy and War departments have been found unreasonable by the Interstate Commerce Commission which has ordered the charges on plates of less than three inches in thickness cut to the commercial-steel basis while prescribing rates 115 per cent of that basis for plates of three inches or more in thickness. The decision in No. 29067 and related complaint cases involves interstate rates on armor plate throughout the country, except in Southern Classification territory and between that territory and Official Classification territory, where the rates have been on the commercial-steel basis as a result, respectively, of voluntary action by the carriers and "an oversight in connection with tariff publication."

The decision awards reparation, which Commissioner Porter's dissent indicates will be substantial—amounting, for example, to approximately $1,092 per car on past shipments from Chicago to the Pacific Coast. Mr. Porter, with whom Commissioners Miller and Patterson agreed, conceded that the assailed rates were too high; but he did not go along with the majority's conclusion that armor plate is entitled to differing levels of rates, or "to bases as low as those prescribed by the majority." Moreover, the dissenting commissioners would have barred reparations by finding the assailed rates unreasonable only for the future, but not in the past.

Present Official-territory rates on armor plate, as indicated in examples used by complainants, show a range of from 103 to 260 per cent of the commercial-steel rates, the average being 114 per cent. The range of rates between Official and Western Trunk Line territories is likewise indicated to be from 107 to 169 per cent of the commercial-steel basis, average 138 per cent. After allowance for land-grant deductions, the net rates on transcontinental traffic from Chicago to Pacific Coast points now average about 112.5 per cent of the commercial-steel rates.

The Navy was the original complainant, although it was joined later by the Army, Maritime Commission and various interested shippers. At the hearings complain-

• • •



One of the Last of the M-36 Tank Destroyers, Mounting a 90 Mm. Gun, to Come from the American Locomotive Company Plant at Schenectady, N. Y., and a New American Locomotive-General Electric 1,000-Hp. Diesel-Electric Unit

ants indicated that they would be satisfied with a dual basis of rates like that prescribed by the commission, but they asked that the rates on plates three inches or more in thickness be made not more than 112.5 per cent of the commercial-steel rates. The railroads were opposed to dividing armor plate into two different kinds. Generally, they undertook to establish that armor plate is a high-grade commodity distinct from ordinary steel, whereas the complainants contended that many articles of commercial steel are at least as high-grade and made of more or less the same kind of steel as armor plate.

In condemning the assailed rates and awarding reparations, the commission noted that complainants had not completed their case with respect to past shipments which are subject to the reparations award. It suggested that this matter might be worked out between the parties, but if that is not possible a further hearing may be sought.

Dissenter Porter's comment on the reparations award noted that the assailed rates have been charged in the past without complaint. Thus he would have applied that principle of *Ashland Coal & Ice Co. v. Atlantic Coast Line R. Co.* 241 I. C. C. 120,256 I. C. C. 429 where the commission said: "When we are of the opinion that rates have become unreasonable as a result of changes in conditions so gradual that no date can be pointed out upon which they became unreasonable, and the history of the rates is such as to justify the carriers in believing that they were maintaining rates which had our approval, we have the power to fix the reasonable rates for the future, and in that 'flexible limit of judgment which belongs to the power to fix rates,' to refuse to hold the rates unreasonable in the past."

"Don't Travel" Appeals Are Being Dropped

Although there has been no announcement with respect to the matter from the Office of Defense Transportation, railroads have been advised by their Washington representatives that the Office of War Information has discontinued the use of contributed radio time for such government appeals as "don't travel" announcements and programs. A similar situation prevails with respect to "don't travel" appeals carried in magazine articles and advertisements at the request of O. W. I.'s War Advertising Council.

This policy, adopted upon the cessation of hostilities with Japan, is being carried out as promptly as possible. It is understood that virtually all such appeals are now eliminated from radio programs, although some of the magazine material will still appear because it could not be eliminated from publications with early closing dates.

Meanwhile O. D. T. Director J. Monroe Johnson has advised the railroads and airlines that he will interpose no further objection so far as solicitation and advertisements are concerned. In a September 6 letter sent to the Association of American Railroads, American Short Line Railroad Association, and Air Transport Association, Colonel Johnson said that transportation agencies "may now enjoy a free hand in matters of this sort."

Equipment and Supplies

LOCOMOTIVES

Baldwin Expects Good Export Locomotive Business

Based on its current backlog of orders and important inquiries still in the negotiation stage, the Baldwin Locomotive Works expects a large volume of future export business. The company recently announced an order for 16 steam locomotives of 4-8-4 type for the National Railways of Mexico, the first Baldwin steam power to be ordered for Mexico since 1935. The new locomotives with tenders will weigh 316 tons each and will be the most powerful steam locomotives on the railway's lines. They will be used to expedite the movement of freight and passenger trains on improved schedules. The locomotives will burn oil as fuel and their equipment will include superheaters, power reverse gears, one-piece cast steel locomotive beds, and roller bearings.

On August 30, representatives of the French Purchasing Commission visited Eddystone, Pa., to inspect the first of 260 2-8-2 type locomotives being built by Baldwin. South America also is represented on Baldwin's list of unfilled orders, which include 47 steam locomotives for five different railroads in Brazil, 14 for three railroads in Columbia, three for Ecuador, six for Guatemala, and two for Bolivia. Three locomotives recently were completed for shipment to Africa and six now are on order for export to Mozambique. Most of the orders now on the books are from customers for whom Baldwin built locomotives for many years prior to the war.

The company has announced that two 2,000-hp. Diesel-electric road locomotives which were sent to Mexico for trial some months ago now have been accepted and purchased by the National Railways of Mexico and four 660-hp. Diesel-electric switching locomotives have been ordered by another customer in Mexico. In addition, a total of 30 660-hp. and 24 1,500-hp. Diesel-electric locomotives now are on order for France and French North Africa.

The Denver & Rio Grande Western and the Western Pacific are considering the purchase of approximately three million dollars worth of new Diesel-electric passenger locomotives to power six new passenger trains to be placed in service by these roads, jointly with the Chicago, Burlington & Quincy, between Chicago and San Francisco. The new service will also be protected by similar locomotives on the Burlington, but additional motive power will not be required.

FREIGHT CARS

The Reading is inquiring for 1,000 box cars of 50 tons' capacity.

The Missouri-Kansas-Texas has ordered 50 all-steel covered hopper cars of 70-ton capacity from the American Car & Foundry Co.

PASSENGER CARS

New Streamliners Planned for Chicago-Florida Service

Plans have been virtually completed for new streamlined passenger train service between Chicago and Florida points, by the Pennsylvania, Chicago and Eastern Illinois, and Illinois Central and their southern connections.

The proposed new trains will be powered by 4,000-hp. Diesel-electric locomotives and will consist of coaches, diner and all-room sleeping cars. It is expected that the trains will comprise 14 cars each and operate on a schedule of 29-hr. to provide daily service between terminals, based on every third day departures via each of the three routes as is now operated by the "Southwind," the "Dixieland," and the "City of Miami." Ownership of the new trains, which are estimated to cost about $1,500,000 each, will be shared by the Louisville & Nashville; Nashville, Chattanooga & St. Louis; Atlantic Coast Line; Florida East Coast; and Central of Georgia, although the orders will be placed by the three initial lines.

The Chicago, Burlington & Quincy, in association with the Denver & Rio Grande Western and the Western Pacific, is planning the purchase of 60 passenger cars of stainless steel construction to re-equip the "Exposition Flyer" now operated daily by these lines between Chicago and San Francisco.

SIGNALING

The Atchison, Topeka & Santa Fe has awarded a contract to the Union Switch & Signal Company for materials to install 110 miles of centralized traffic control between Waynoka, Okla., and Canadian, Tex., with the control machine located at Amarillo, 100 miles west of Canadian. The order includes M-22A dual-control electric switch machines, H-5 searchlight signals, T-21 with SL-21 hand-throw switch stands with electric locks, rectifiers, transformers, relays and housings. Code line circuits involve the use of four carrier sections, with the machine arranged to control the territory between Amarillo and Canadian at a later date, involving three more sections or seven in all, six carrier sections embracing twelve carrier channels and one d-c code section. As a part of this work, the order also involves the rebuilding of an existing 2-ft. 6-in. control machine to be rearranged for controlling the entrance and exit of the yard at Canadian, with the same general class of materials involved as in the main project. The field installation work will be done by the Santa Fe's signal contruction forces.

New Coaches in Britain.—800 new corridor vestibule coaches, now in production, are but the first installment "of an urgent and extensive L. M. S. scheme to provide more and better facilities for passengers," the London, Midland & Scottish has announced. New features include improved steam heating, better hot water supply, larger observation windows with low sills, and sliding ventilator light panels.

Supply Trade

Lewis A. Harlow, assistant manager, has been appointed manager of the advertising division of **Fairbanks, Morse & Co.**

C. L. Owens, assistant general sales manager, has been appointed general sales manager of the **Philip Carey Manufacturing Co.,** Cincinnati, Ohio.

Bowser, Inc., has purchased the **Peterborough Lock Manufacturing Company, Ltd.,** Canada, which manufactures a complete line of hardware products.

G. Howard Hutchins, general manager of the Malabar Machine Company, has been appointed president of **Chadkin Sales, Inc.,** Los Angeles, Cal.

The Gardner, Mass., plant of the **Heywood-Wakefield Company** has been awarded the Army-Navy "E" for the fifth time.

The **National Battery Company** has announced plans for a new building on approximately eight acres of land in St. Paul, Minn., which it recently purchased from the Northern Pacific.

Captain W. G. H. Finch, United States Naval Reserve, has been returned to inactive duty and will assume the presidency of **Finch Telecommunications, Inc.,** Passaic and Clifton, N. J.

Harry M. Francis has returned to the **American Steel & Wire Co.,** U. S. Steel subsidiary, where he will resume his duties as assistant vice-president, sales, following a three-year period of service with the War Production Board in Washington.

Henry K. Patjens has been elected president of the **Economy Arch Company** of St. Louis, Mo. For the past seven years Mr. Patjens has been a sales engineer of the Baldwin Locomotive Works with headquarters in St. Louis.

The **Monroe Auto Equipment Company,** Monroe, Mich., has purchased a large new plant at Hillsdale, Mich., which will be equipped to compound and mould rubber and synthetics. The new plant is a part of a $1,500,000 expansion program recently announced by the company.

Edgar W. Bartz has been appointed welding specialist for the San Francisco, Cal., bay area by the **Westinghouse Electric Corporation.** Prior to his recent transfer to San Francisco, Mr. Bartz had served in the company's Trafford, Pa., plant as a specialist in electric welding electrodes and materials.

Jack Kaufman has been appointed head of a new office opened in San Francisco, Cal., by the **Aireon Manufacturing Corporation.** Mr. Kaufman has been engaged for a number of years in electronics in San Francisco. He formerly was president of Heintz & Kaufman, Ltd., and was executive vice-president of Glove Wireless, Ltd.

Lt. Col. H. A. Stevenson, general staff corps, Army Service Forces, was retired to inactive duty on August 1, and has returned to his former business—the distribution in the Michigan territory of industrial trucks, tractors and cranes of the Baker Industrial Truck Division of the **Baker-Raulang Company,** Cleveland, Ohio.

Donald L. Whitehouse, assistant manager of the Washington, D. C., office of the **Monroe Auto Equipment Company,** Monroe, Mich., has been appointed manager of the newly established office in Chicago. The new office, which is located at 3001 Willoughby Tower building, Chicago, will handle sales of all of the company's products in the West.

A $5,000,000 post-war research and production expansion program has been approved by the board of the **Allegheny Ludlum Steel Corporation.** A research laboratory and related experimental and pilot plant equipment will be built at the company's headquarters, Brackenridge, Pa., and a cold rolling mill will be constructed at the West Leachburg, Pa., plant.

Victor S. Harrington has been appointed district manager of the newly-created transportation division of the **General Electric Company's** Pacific district apparatus department, with headquarters in San Francisco, Cal. For the past several years Mr. Harrington has been transportation specialist in the San Francisco office.

R. D. Birge has been appointed Detroit, Mich., representative of the Philco Storage Battery division of the **Philco Corporation.** Mr. Birge was graduated from Purdue University with a degree in electrical engineering in 1938. He has been associated with the Louis Allis Company as field engineer in Detroit for three years and more recently in Philadelphia, Pa., for one year.

The **Hewitt Rubber Corporation** of Buffalo, N. Y., has acquired approximately 90 per cent of the capital stock of **Robins Conveyors, Inc.,** of Passaic, N. J. Thomas Robins, Jr., president of Hewitt since 1936, has been chairman of Robins Conveyors' executive committee for the past five years and there has been a close association between the two companies.

Norman Wunderlich has been appointed executive sales director of radio equipment and allied products of the **Federal Telephone & Radio Corp.,** Newark, N. J., manufacturing associate of the International Telephone & Telegraph Corp. Mr. Wunderlich formerly was manager of the communications and electronic division of the Galvin Manufacturing Corporation.

The **Westinghouse Electric Corporation** has acquired the **B. F. Sturtevant Company** of Boston, Mass., manufacturer of air handling and processing equipment, which it will operate as a division of the parent company. In addition to its main plant at Boston, the Sturtevant Company has factories at Camden, N. J., La Salle, Ill., Berkley, Calif., and Galt, Ontario, Canada.

Aubrey M. Callis has been appointed sales manager of the Whiting, Ind., and Detroit, Mich., plants of the Federated Metals division of the **American Smelting & Refining Co.** Mr. Callis, formerly assistant general manager of the Pacific Coast department with headquarters at Los Angeles, Calif., has been associated with Federated since 1928 in sales and plant executive capacities.

The **Aireon Manufacturing Corporation** has purchased all the stock of the **Oxford-Tartak Company** and the **Cineaudagraph Corporation** of Chicago for $400,000. Both companies manufacture radio speakers, microphones and other electronic products. Aireon has also purchased the entire assets of the **Midco Tool & Supply Co.** of Oklahoma City, Okla., manufacturers of oil well supplies and accessories, for $250,000.

Clay Crane has been appointed director of public relations and advertising for the **Aireon Manufacturing Corporation** with offices at the company's headquarters in Kansas City, Mo. Mr. Crane was a prisoner in the Santo Tomas prison camp near Manila for 37 months. For two years prior to the outbreak of the war, he lived in Manila as a staff member of the National City Bank of New York.

Lewis A. Belding has been appointed president of the **Harlan & Hollingsworth Corp.,** Wilmington, Del., to expand the company's post-war activities to include the production of freight cars. Mr. Belding recently completed an engineering assignment with the Henry J. Kaiser Company, which followed 15 years of engineering, designing, and selling of railroad cars for the General American Transportation Corporation of Chicago and an earlier association with the American Car & Foundry Co.

Electronic Laboratories, Inc., Indianolis, Ind., has announced that the following new jobbers have taken on sales distribution for the company's auto radio vibrator replacement lines: Radio Wire Television, Inc., Boston, Mass.; Radio Products Sales, Denver, Colo.; Radio Electric Products, Buffalo, N. Y.; Radio Products Sales, Los Angeles, Cal.; Scott Radio Supply, Long Beach, Cal.; Hatry and Young, Hartford, Conn.; the Roehr Distributing Company, St. Louis, Mo.; the R. and R. Part & Supply Co., Inc., Lubbock, Texas; and the Central Missouri Distributing Company, Jefferson City, Mo.

Frank C. Cline, special representative for the lamp division of the **Westinghouse Electric Corporation** in its Northwestern district headquarters at Chicago, has been appointed acting manager of the Southwestern district with headquarters at St. Louis, Mo., to succeed **Dan M. Galvin,** who is entering private business in Dallas, Texas. **George S. Crawford** has been appointed to succeed Mr. Cline as special representative in Chicago. For the past 13 years, Mr. Crawford has been a special representative of the Westinghouse Electric Supply Company, wholesale marketing outlet for the Westinghouse Electric Corporation, and many other suppliers of home appliances, apparatus and supplies.

Harry A. Winne, vice-president in charge of engineering for the **General Electric Company's** apparatus department, has been appointed vice-president in charge of engineering policy for the entire

company, with headquarters in Schenectady, N. Y. **Ernest E. Johnson,** assistant engineer of the aeronautics and marine engineering division, has been appointed to succeed Mr. Winne in the apparatus department. Mr. Winne joined General Electric as a student engineer in the testing department after he was graduated from Syracuse University with a degree in electrical engineering in 1910. The following year he was appointed head of the large motor, generator, and synchronous converter test, and subsequently assistant general night foreman of the testing department. In 1916 he was promoted to the power and mining engineering department, now known as the industrial divisions, and six years later assigned to the steel mill section of the industrial engineering department, becoming head of that section in 1930. He was appointed sales manager of the combined mining and steel mill section and, in April 1937, assistant to the engineering vice-president. He was elected vice-president in charge of apparatus design engineering in October, 1941. He was appointed manager of the engineering apparatus department in January, 1945.

Mr. Johnson joined the General Electric Testing department after he was graduated from Washington State College in 1922 with a degree in electrical engineering. He was assigned to the engineering general department in 1924. He was appointed assistant to the executive engineer of the General Electric research laboratory in 1931 and three years later engineer of the generator voltage regulator department. He was appointed assistant to the assistant to the Schenectady works manager in 1938, and subsequently became engineer of the aeronautics division, aeronautics and marine engineering department. For the past few years he has been assistant engineer of the aeronautics and marine engineering division.

Alfred E. Greco, formerly with the public relations department of the Youngstown Sheet & Tube Co., Youngstown, Ohio, has been appointed assistant to the vice-president, public relations, of the **Pullman Company,** with headquarters at Chicago. In his former position he was also engaged in industrial relations work and labor-management liaison, and was editor of the firm's employee magazine. Mr. Greco was born at Youngstown on November 30, 1910, and is a graduate of Ohio University. After leaving college he entered newspaper work and served for a number of years with the Scripps-Howard organization in Youngstown, Pittsburgh, Pa., Indianapolis, Ind., and other cities. He left this field in 1937 to accept the position he held at the time of his new connection.

A. E. Greco

OBITUARY

George L. Walters, who for the past ten years has been district field engineer, at Ft. Worth, Tex., for the Electric Tamper & Equipment Company, died on August 16.

George Steele Seymour, assistant general auditor of the Pullman Company, died on September 7, at his home in Chicago. Mr. Seymour, who was 68, had been a Pullman employee for more than 35 years.

F. Archer Thompson, head of the Detroit, Mich., office of the Bullard Company's machine tool plant at Bridgeport, Conn., died July 31. He was 62 years of age.

Edward L. Goodwin, senior assistant mechanical superintendent of the Pullman Company, died on September 6, at his home in Chicago, after a long illness. Mr. Goodwin was 60 years of age and had served the Pullman Company for nearly 40 years.

R. G. Phillabaum, service engineer of the Locomotive Finished Material Company, in Chicago, was killed in an accident at his home on September 1.

Fred A. Pawsey, chief engineer of the Ohio Locomotive Crane Company, Bucyrus, Ohio, died September 3. Mr. Pawsey was graduated from the Case School of Applied Science in 1905 and has been associated with the Ohio Locomotive Company since July, 1919.

Edward Steptoe Evans, founder and president of the Evans Products Company, Detroit, Mich., died on September 6. Mr. Evans was born at Thaxtons, Va., on May 24, 1879, and received his higher education at George Washington University. In 1915 he founded the Evans Products Company which has been active in the development of auto-loading devices for freight cars and other railroad equipment. During World War I, he served as a captain in the Quartermaster Corps, United States Army, and at the time of his death held a commission as Lieutenant Colonel, specialist reserve, U. S. Air Corps.

BRITAIN'S SHARE OF RAILWAY REVENUE.—The British government has received about 50 per cent of the net revenue of British railways in the years of government control, T. D. Slattery, general traffic manager of the British Railways in New York, has revealed. Figures for the years 1941 through 1944, inclusive, show that the government received $880,995,000, as its share of the net revenue pool of $1,750,375,000, or slightly more than was received by the railroads.

EMPLOYMENT OUTLOOK.—The second in the Chesapeake & Ohio series of advertisements treating of post-war topics, and relating to employment possibilities in industries along its lines, is devoted to a discussion of the paper industry.

Construction

CHESAPEAKE & OHIO.—Division 4 of the Interstate Commerce Commission (with Commissioner Mahaffie not participating) has authorized this company to build a 14.6-mile line from Jenkins, Ky., into Virginia to serve the so-called Meade Fork mine being opened by the Clinchfield Coal Corporation. One 3,400-ft. tunnel would be included. The maximum grade will be 2.05 per cent compensated, the maximum curvature 14 deg., and the average curvature per mile 227 deg. Treated ties and 100-lb. relay rail are to be used. The estimated cost is $2,775,000.

CLINCHFIELD.—Division 4 of the Interstate Commerce Commission (with Commissioner Mahaffie not participating) has authorized the Atlantic Coast Line and Louisville & Nashville, lessees of the Carolina, Clinchfield & Ohio, to operate, and the latter to construct, a 14.5-mile line from Fremont, Va., to serve the so-called Lick Fork mine being opened by the Clinchfield Coal Corporation. Cost estimates vary, but are in the neighborhood of $2,000,000. The route includes 4 tunnels, one of which is to be 2,353 ft. long. The maximum grade is 2 per cent and the maximum curvature 14 deg., the average curvature per mile being 262 deg. Untreated ties and 100-lb. relay rail are to be used.

Abandonments

ATLANTIC COAST LINE.—Division 4 of the Interstate Commerce Commission, with Commissioner Mahaffie not participating, has denied this road's application for authority to abandon a branch from Sumter, S. C., to Darlington, 37.78 miles, and a branch thereto from Elliott to Bishopville, 9.56 miles, without prejudice to a renewal of the application one year hence. Under present conditions, with new trucks unobtainable, there is an "urgent public need" for the facilities of this line, the division held, and its traffic has increased in the past two years. "Even though many of the shippers declined the service offered by the branch in the past," said the division, "the fact remains that it is now practically the last and only means of transportation available."

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—On notice by the unions involved that a settlement of the issues had been reached by negotiation with the carrier, Division 4 of the Interstate Commerce Commission has revoked its order reopening for further hearing its Finance Docket 14001 proceedings for the purpose of determining whether conditions should be prescribed for the protection of employees affected by the line abandonment authorized therein.

PITTSBURGH & LAKE ERIE.—This road and the Youghiogheny Northern and Pittsburgh, McKeesport & Youghiogheny, the properties of which it operates under lease, have applied to the Interstate Commerce

Commission for authority to abandon operation of, and to abandon, respectively, a 2-mile line from Broadford, Pa., to Summit Transfer, owned, except for some connecting tracks, by the Northern.

Financial

C. & O. Gives More Details on Proposed Unification

The Chesapeake & Ohio made public on September 12 further details of its proposed unification with the Nickel Plate, Pere Marquette and Wheeling & Lake Erie. The four roads, the C. & O. management states, would be welded together either through merger or consolidation. If the plan is carried out through a merger, the Chesapeake & Ohio Railway will be the continuing company. If the unification is by consolidation, a new corporation, the Chesapeake & Ohio Railroad, will be formed to take over the assets and assume the obligations and liabilities of the four constituent companies. The interests of the stockholders of the constituent companies in the unified company will be the same under either method.

Describing benefits to be derived from uniting the roads, the statement adds: "The unification of ownership and operation of the properties of these companies will make possible economies in operation, maintenance, general administration and debt service and will enable the unified company to compete more effectively with the larger systems serving the same territory and to give improved service to the public by permitting operations over the shortest and most direct routes available over the lines of the constituent companies."

The unified company would operate approximately 7,200 miles of road in the United States and Canada, and its net investment in transportation property would be approximately $900,000,000. In terms of mileage, the unified company would constitute the third largest railway system in eastern territory.

The Chesapeake & Ohio owns 192,400 common shares, or 57 per cent of the outstanding common, of the Nickel Plate and 13,950 preferred shares and 313,900 common shares, or 48 per cent of the total outstanding stock, of the Pere Marquette. The C. & O. also owns certificates of deposit representing 115,369 shares of 4 per cent prior lien stock, 1,658 shares of 5½ per cent preferred stock and 78,145 shares of common stock, or 35.11 per cent of the outstanding stock, of the Wheeling & Lake Erie. The New York, Chicago & St. Louis owns certificates of deposit representing 14,800 shares of 5½ per cent preferred stock and 168,000 shares of common stock, or 32.88 per cent of the outstanding stock, of the Wheeling & Lake Erie and 1,296 of the 7,657,354 common shares of the C. & O.

It is proposed that the unified company should have an authorized capital stock consisting of $100,000,000 of $100-par preferred and $300,000,000 of $25-par common. The new preferred stock would be entitled to receive cumulative dividends at a rate to be determined within the range of 3½ to 4 per cent (it being the purpose to fix a rate which would enable the preferred stock to sell at par when issued). It would be redeemable in whole or in part on any dividend payment date on 30 days' notice at $105 per share, plus a sum equal to the amount of all accumulated and unpaid dividends thereon to the redemption date. So long as accrued preferred dividends are paid, the company proposes to set aside annually in a sinking fund 5 per cent of the remaining net earnings of the preceding year after allowing $3.50 per share on the common stock; provided, however, that the sinking fund, including unexpended balances from prior periods, shall at no time exceed $1,000,000. This fund would be held by the company for the purchase of the preferred stock. The preferred would have equal voting power with the common.

The merger or consolidation would be accomplished through an exchange of preferred and common stocks for presently outstanding issues as follows: one share of new preferred and seven-tenths share of new common for each share of Nickel Plate 6 per cent preferred; nine-tenths share of new common for each share of Nickel Plate common; one share of new preferred and one-third share of new common for each share of Pere Marquette prior preference; eight-tenths share of new preferred and four-tenths share of new common for each share of Pere Marquette preferred; one-half share of new common for each share of Pere Marquette common; one and 15/100 share of new preferred for each share of Wheeling & Lake Erie prior lien stock; one share of new preferred for each share of Wheeling & Lake Erie 5½ per cent preferred, and one and one-half shares of new common for each share of Wheeling & Lake Erie common. In the event of merger, holders of C. & O. common stock would retain their present stock, but in the event of consolidation, each share of common stock would be exchangeable for one share of common stock of the unified company.

Upon the exchange of the stocks of the constituent companies for stocks of the unified company, there would be issued and outstanding 647,360 shares of preferred stock of the unified company and 8,326,131 shares of common. It might prove necessary in carrying out the plan to issue preferred and common stock for the shares held by constituent companies in which event it is contemplated that the additional shares, when acquired by the unified company, would be cancelled so that the net capitalization of the unified company would be as stated above.

In addition to board action, the plan of unification will have to receive the assent and approval of the stockholders of each of the companies involved. Consummation of the plan is further dependent upon authorization and approval by the Interstate Commerce Commission.

CHICAGO & EASTERN ILLINOIS—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission has authorized this company to assume liability for $1,440,000 of series D 2 per cent equipment trust certificates, sold at 99.53 to Halsey, Stuart & Company and others, in connection with the acquisition of 500 50-ton twin-hopper coal cars and 3 2,000-hp. Diesel-electric road locomotives. (Previous item in *Railway Age* of August 11, page 270.)

LEHIGH & NEW ENGLAND.—*Trackage Rights.*—This road has applied to the Interstate Commerce Commission for authority to enter a trackage rights agreement covering operation over Central of New Jersey tracks between Hauto, Pa., and Nesquehoning.

NORTHERN PACIFIC.—*Awards Bonds.*—On September 6 the Northern Pacific awarded its $55,000,000 issue of collateral trust bonds due September 1, 1975 to Morgan, Stanley & Co. and associates at 98 for a 4½ per cent coupon. The bonds were reoffered at 100. (Previous item in *Railway Age*, September 1, page 390.)

SOUTHERN.—*Promissory Notes.*—This road has applied to the Interstate Commerce Commission for authority to issue and sell six negotiable promissory notes in the aggregate amount of $1,599,840. The notes, secured by conditional sales agreements with the General Motors Corporation (Electro-Motive Division), would be issued in connection with arrangements for financing the purchase of six 4,000-hp. Diesel-electric locomotives at an aggregate cost of $2,133,516. Each of the six $266,640 promissory notes would be dated not later than 10 days after the delivery of the locomotives to which it applied, the unit cost of the locomotives being $355,586. The notes would be payable in 12 semi-annual installments beginning April 15, 1946, and the interest rates would be fixed by competitive bids which will be opened September 26.

SOUTHERN PACIFIC.—*Awards Bonds.*—On September 11 the Southern Pacific awarded $125,000,000 of new first mortgage bonds to Kuhn, Loeb & Co. on a basket bid of 98. The new bond issue consists of the following: $25,000,000 of series A 2⅞ per cent bonds due in 1961; $50,000,000 of series B 3¾ per cent bonds due in 1986; and $50,000,000 of series C 3¾ per cent bonds due in 1996. The average annual interest cost of the company is 3.781 per cent. The bonds were reoffered at 99½ for the 2⅞s of 1961; 100 for the 3¾s of 1986; and 99¾ for the 3¾s of 1996. The refunding will result in annual fixed charges being reduced by $1,270,190. (Previous item in *Railway Age* of August 25, page 352.)

Average Prices Stocks and Bonds

	Sept. 11	Last week	Last year
Average price of 20 representative railway stocks	55.45	54.15	39.93
Average price of 20 representative railway bonds	96.55	96.51	88.41

Dividends Declared

Dayton & Michigan.—Common, 87½¢, semi-annually, payable October 1 to holders of record September 16; 8% preferred, $1, quarterly, payable October 2 to holders of record September 16.

Kansas City Southern.—Preferred, 50¢ (unchanged from previous quarter), payable October 15 to holders of record September 29.

Railway Officers

EXECUTIVE

Bernard E. Young, whose appointment as assistant to president of the Southern at Washington, D. C., was announced in the *Railway Age* of September 1, was born in Martinsburg, W. Va., on April 18, 1905. He entered railroad service in March, 1917, as a messenger in the office of the general claim agent of the Norfolk & Western at Roanoke, Va. After serving in various clerical capacities in the claim, motive power and safety departments of the Norfolk & Western, he became chief clerk in the office of the manager, advertising, publicity and magazine departments of the road in 1929. In July, 1936, he was given a leave of absence by the Norfolk & Western to become manager of the railroad section, public relations department, Association of American Railroads, at Washington, D. C.

Bernard E. Young

In October, 1942, he was appointed executive representative of the Southern, with headquarters at Washington, continuing in that capacity until his promotion to assistant to the president.

F. N. Reynolds, assistant general manager of the Cleveland, Cincinnati, Chicago & St. Louis, at Indianapolis, Ind., has been promoted to assistant to the vice-president and general manager, with the same headquarters, a newly created position.

William N. Deramus, in addition to his post as president of the Kansas City Southern, has been elected chairman of the board of directors to succeed **M. Livingston Delafield** who died in New York on August 15. Mr. Deramus maintains headquarters at Kansas City, Mo.

Joseph L. Sheppard, whose promotion to assistant vice-president of the Illinois Central System, with headquarters at Chicago, was reported in the *Railway Age* of August 25, was born at Greenville, S. C. After a public school education he entered the employ of the Chesapeake, Ohio & Southwestern (now a part of the Illinois Central) in July, 1896, as a messenger at Memphis, Tenn., subsequently holding various clerical positions in the local freight office at Memphis. In September, 1903, he was transferred to the office of the commercial agent at Memphis, as export bill of lading clerk, later rising to chief clerk in that office. In July, 1906, Mr. Sheppard went with the Illinois Central as

Joseph L. Sheppard

rate quotation clerk in the general freight office at Memphis, subsequently occupying various clerical and supervisory positions in that office until February, 1913, when he was advanced to assistant general freight agent of the Southern Lines of the I. C. in June, 1926, he was further advanced to general freight agent of these lines, and in 1932 he was transferred to Chicago in the same capacity with systemwide jurisdiction. Mr. Sheppard was promoted to assistant traffic manager at St. Louis, Mo., in February, 1935, and to freight traffic manager at Chicago in May, 1939. On August 1, 1944, he was advanced to general traffic manager of the I. C. system, the position he was holding at the time of his recent promotion.

FINANCIAL, LEGAL AND ACCOUNTING

C. F. Lodter, whose promotion to auditor of the Coast Lines of the Atchison, Topeka & Santa Fe, at Los Angeles, Cal., was

C. F. Lodter

reported in the *Railway Age* of September 8, entered the employ of the Santa Fe as a clerk in the stationery department at Topeka, Kan., on September 23, 1910, transferring to the office of the auditor of disbursements in July, 1916. After serving in various clerical positions in that office, he was made chief clerk to the auditor at Amarillo, Tex., in August, 1919. On September 4, 1937, Mr. Lodter was promoted to assistant auditor at Los Angeles, the position he was holding at the time of his recent promotion.

R. D. Ewers, chief clerk to the auditor of the Atchison, Topeka & Santa Fe, at Topeka, Kan., has been promoted to auditor of the Panhandle & Santa Fe, with headquarters at Amarillo, Tex., succeeding **C. A. Casler,** who has retired.

W. F. Crueger, chief clerk to the comptroller of the Norfolk & Western, has been appointed tax and insurance agent at Roanoke, Va., succeeding **B. F. Pence,** who has retired after more than 45 years of service.

R. V. Cole, whose promotion to auditor of disbursements of the Southern Pacific, with headquarters at San Francisco, Cal., was reported in the *Railway Age* of

R. V. Cole

August 18, entered the employ of the Southern Pacific as an office attendant at San Francisco in April, 1918. After serving in various clerical capacities he was promoted to assistant chief clerk in the office of the auditor of disbursements in 1928, later advancing to chief clerk, traveling accountant, special accountant and supervising accountant. Mr. Cole was promoted to assistant auditor of disbursements, at San Francisco, in 1939, remaining in that position until his new appointment.

I. M. Craig, assistant auditor passenger receipts of the Atlantic Coast Line, has been appointed auditor passenger receipts, with headquarters as before at Wilmington, N. C., succeeding Bertram Quelch, whose death on July 26 was reported in the *Railway Age* of August 18. **W. E. Jenkins,** auditor miscellaneous accounts, has been appointed assistant auditor freight receipts, with headquarters as before at Wilmington, succeeding **H. J. Gerdes,** who succeeds Mr. Craig as assistant auditor passenger receipts. **D. A. Lockfaw** has been appointed auditor miscellaneous accounts, succeeding Mr. Jenkins, and **W. E. Hand** has been appointed general accountant at Wilmington.

OPERATING

B. E. Cisna, acting superintendent of the Peoria & Pekin Union, at Peoria, Ill., has been promoted to superintendent, succeeding **J. L. Umshler,** whose death is reported elsewhere in these columns.

T. D. Williams has been appointed assistant superintendent-chief dispatcher of the Pensacola division of the Louisville & Nashville, at Pensacola, Fla., succeeding **W. T. Welch,** whose death is reported elsewhere in these columns.

D. A. Fawcett, assistant to the general manager of the Cleveland, Cincinnati, Chicago & St. Louis, at Cincinnati, Ohio, has been advanced to assistant general manager, at Indianapolis, Ind., succeeding **F. N. Reynolds,** whose promotion to assistant to the vice-president and general manager is reported elsewhere in these columns.

E. C. Sparks, assistant superintendent of the Eastern Kentucky division of the Louisville & Nashville, at Ravenna, Ky., has been promoted to superintendent, with the same headquarters, succeeding **J. D. Haydon,** who has been granted a leave of absence because of ill health. **W. R. Winkler** has been appointed assistant superintendent at Ravenna, relieving Mr. Sparks.

TRAFFIC

B. G. Stall has been appointed division freight agent on the Chesapeake & Ohio, at Lexington, Ky.

R. L. Miller, who for the past two years has been on military leave of absence, has been reappointed general agent of the Erie, at Memphis, Tenn.

F. F. Moore, commercial agent on the Erie, at Cleveland, Ohio, has been promoted to general agent at Indianapolis, Ind., succeeding **T. J. Williamson,** whose death is reported elsewhere in these columns.

Clarence L. Neal, ticket agent on the New York, Chicago & St. Louis, at Ft. Wayne, Ind., has been promoted to general agent, passenger department, with the same headquarters.

W. E. Bilger has been appointed general agent of the Norfolk & Western, with headquarters at Boston, Mass. The positions of New England agent, formerly held by **J. S. Cashen,** deceased, and traveling freight agent, formerly held by Mr. Bilger, have been abolished.

L. N. Helm, who had been serving as commercial agent of the Norfolk & Western at Roanoke, Va., while **C. W. Stover** was serving in the armed forces, has resumed the position of foreign freight agent at Cincinnati, Ohio, now that Mr. Stover has returned to his former duties with the N. & W.

William R. Belfield, division freight agent of the Southern, has been promoted to assistant general freight agent, with headquarters as before at Augusta, Ga.; and **Robert B. Arthur,** commercial agent at Augusta, has been promoted to district freight agent there.

William D. Kelley, assistant to the freight traffic manager of the New York, Chicago & St. Louis, at Cleveland, Ohio, has been advanced to division freight agent at Ft. Wayne, Ind., succeeding **L. J. Peffer,** whose promotion to general agent at Minneapolis, Minn., was reported in the *Railway Age* of June 2.

C. V. Harrow, assistant general freight agent of the Erie, at Chicago, has been promoted to general eastern freight agent at New York, succeeding **J. T. McEntee,** who has been promoted to special representative. **George W. Madsen,** assistant general freight agent at Buffalo, N. Y., has been transferred to Chicago, relieving Mr. Harrow.

Arthur C. Leake, whose promotion to traffic manager of the Minneapolis & St. Louis, at St. Louis, Mo., was reported in the *Railway Age* of September 8, was born at Monett, Mo., on March 31, 1889. After a public school education, he entered railway service in December, 1904, as a clerk in the mechanical department of the St. Louis-San Francisco, at Monett, serving in that capacity until 1907, when he became a brakeman on the Eastern division of the Frisco. During World War I he served with the Transportation Corps in

Arthur C. Leake

France, rising to the rank of master sergeant. From 1919 to 1921, Mr. Leake was engaged in the railway tie business, returning to the Frisco in August of the latter year as a clerk in the Traffic Department. He was promoted to chief clerk in the milk traffic department in 1923, later in that year serving in the same capacity in the office of the division passenger agent at Memphis, Tenn., and as city freight and passenger agent at that point. In April, 1929, Mr. Leake went with the Minneapolis & St. Louis as traveling agent at St. Louis, Mo., and in 1936 he was advanced to general agent at Birmingham, Ala. In 1943, he was transferred to St. Louis in the same capacity, which position he held until his recent promotion.

Carl A. Larsen, whose promotion to general freight agent on the Illinois Central at Chicago was reported in the *Railway Age* of August 25, was born at Siuox City, Iowa, on January 22, 1909, and received his higher education from LaSalle Extension University. He entered railway service in November, 1925, as a steno-clerk in the office of the division freight and passenger agent of the Illinois Central at Sioux City. In October, 1929, he was promoted to secretary to the assistant general freight and passenger agent in Chicago, subsequently serving in numerous stenographic and clerical positions at that point until October, 1938, when he was advanced to

Carl A. Larsen

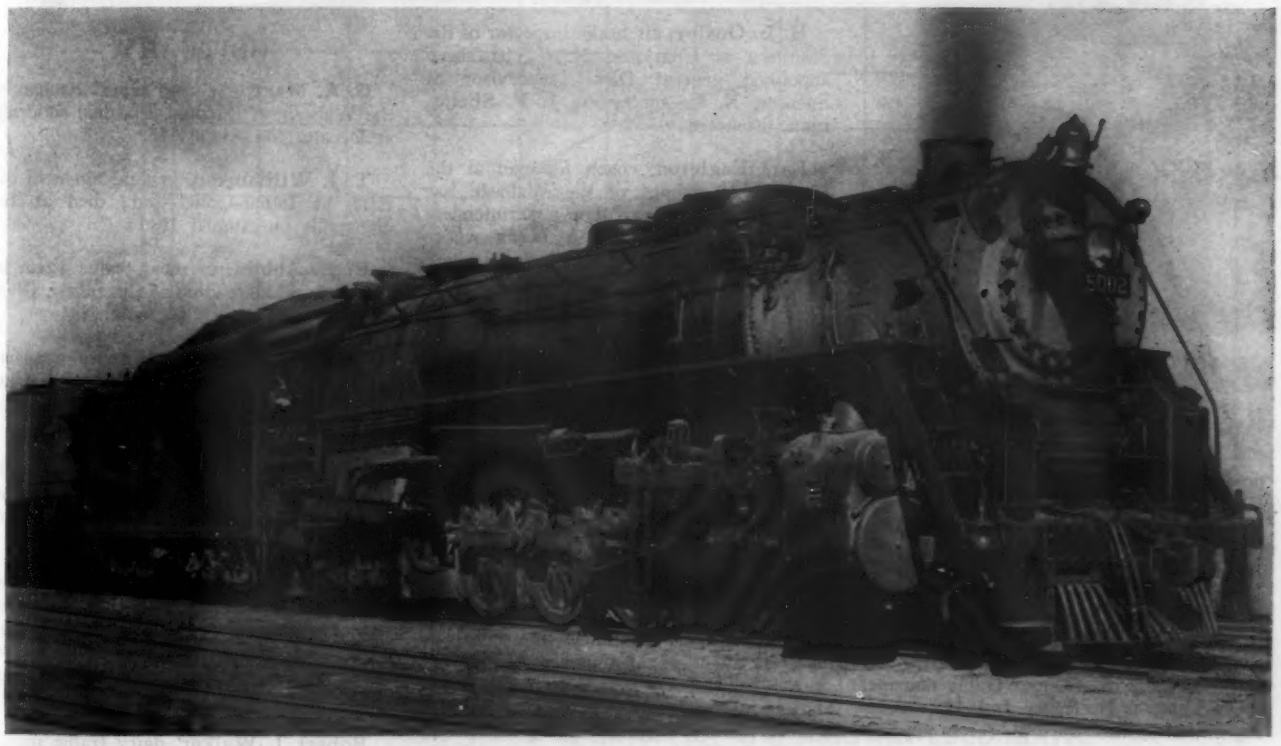
chief clerk to the vice-president-traffic. On September 16, 1942, Mr. Larsen was promoted to office manager, and two years later he was further advanced to assistant to the freight traffic manager at Chicago, the position he was holding at the time of his recent promotion.

Paul W. Muske, whose promotion to general freight agent of the Minneapolis & St. Louis, at Minneapolis, Minn., was reported in the *Railway Age* of September 8, was born at New Ulm, Minn., on February 21, 1901, and was graduated from Martin Luther College in 1917. He entered railway service as a section laborer on the Chicago & Northwestern at New Ulm in June of that year, becoming a telegraph operator on the Minnesota division of the C. & N. W., in September. In June, 1918 he went with the Great Northern as agent-operator serving at various points in Minnesota. The following year he entered the employ of the M. & St. L. as an operator at Montgomery, Minn., and in April, 1920, he was advanced to chief clerk to the agent at Albert Lea, Minn. He entered the traffic department in October, 1925, as a rate clerk at Minneapolis, becoming chief

Paul W. Muske

News Department continued on next left-hand page

LIMA-BUILT 4-8-4s MEET *today's* DEMANDS



EFFICIENT through freight operation today calls for motive power that can consistently maintain fast schedules with heavy loads, with records of high availability and low maintenance.

Under the stress of wartime traffic, Lima-built 4-8-4 steam locomotives have proved their ability to meet these exacting requirements.

LIMA LOCOMOTIVE WORKS INCORPORATED, LIMA, OHIO

clerk in July, 1935. Mr. Muske was promoted to assistant general freight agent at Minneapolis in October, 1941, the position he was holding at the time of his recent promotion.

Rommie B. Smith, whose promotion to freight traffic manager of the Illinois Central System, with headquarters at Chicago, was reported in the *Railway Age* of August 25, was born at Whitesville, Ky., on December 25, 1896, and entered railway service as an agent-operator on the Indiana division of the Illinois Central in May, 1913, remaining in that capacity at various points on the division, except for the period from June, 1918 until September, 1919, when he served in the United States Army, until his appointment as commercial agent at Cairo, Ill., in November, 1925. He subsequently held the positions of traveling freight and passenger agent at Carbondale, Ill., and Bloomington and commercial agent at St. Louis, Mo., and at Peoria, Ill. In July, 1942, Mr. Smith was advanced to assistant coal traffic manager at Chicago, becoming coal traffic manager six months later. He was promoted to assistant traffic manager at Chicago on December 1, 1944, remaining in that position until his recent appointment.

Rommie B. Smith

William H. Wartmann, traveling coal traffic agent of the Chesapeake & Ohio, with headquarters at Cincinnati, Ohio, has been promoted to coal traffic agent at that point, succeeding **R. L. Abbihl,** whose death is reported elsewhere in these columns. **Graydon Shaw,** chief clerk to the assistant coal traffic manager at Cincinnati, has been advanced to assistant coal traffic agent, with the same headquarters, a newly created position.

ENGINEERING & SIGNALING

St. John Munro, whose promotion to district engineer of the British Columbia district of the Canadian National, at Vancouver, B. C., was reported in the *Railway Age* of August 25, was born on June 24, 1887, in Lancashire, England, and received his higher education from Victoria University, Manchester, England. He entered railway service in August, 1907, on a location party on the Canadian Northern (now Canadian National), at Winnipeg, Man., Canada. In 1912, he was promoted to resident engineer, at Resplendent, B. C., being transferred to Vancouver in 1916, From 1917 to 1920, Mr. Munro was loaned to Pratt & Ross as supervisory engineer on the Vancouver terminals of the Canadian National, becoming division engineer at Kamloops, B. C., on his return to the railway. In 1929, he was transferred in the same capacity to the Vancouver Island lines, at Victoria, B. C., the position he was holding at the time of his recent promotion.

MECHANICAL

George W. Somers, foreman boilermaker of the Canadian National at Halifax, N. S., has been appointed boiler inspector, Atlantic region, with headquarters at Moncton, N. B.

H. L. Ousley, air brake inspector of the Southern at Charlotte, N. C., has been appointed general Diesel supervisor at Spencer, N. C., succeeding **J. F. Sheneman,** promoted.

Earl Eagleton, coach foreman at the Decatur, Ill., shops of the Wabash, has been promoted to car shop superintendent at Decatur, succeeding **G. A. Marx,** whose death on August 16, is reported elsewhere in these columns.

J. D. Nimmo, master mechanic of the Gulf Division of the Gulf, Colorado & Santa Fe, at Galveston, Tex., has been transferred to the Northern division, at Cleburne, Tex., succeeding **A. T. Lohmann,** who has retired. **D. J. Everett,** general mechanical inspector of the Santa Fe system, at Topeka, Kan., has been promoted to master mechanic at Galveston, relieving Mr. Nimmo.

K. A. Lentz, master mechanic on the Southern, at Somerset, Ky., has been transferred to Meridian, Miss., succeeding **J. S. Breyer,** whose appointment as general industrial agent at Meridian was reported in the September 8 issue. **S. H. DuBose,** master mechanic at Ludlow, Ky., has been transferred to Somerset relieving Mr. Lentz, and **R. G. Field,** assistant master mechanic at Meridian, has been advanced to master mechanic at Ludlow, replacing Mr. DuBose.

SPECIAL

M. F. Clune has been appointed assistant superintendent of safety of the Delaware & Hudson, with headquarters at Albany, N. Y.

Dr. Cornelius F. Holton, who has been serving as supervisor of the Central of Georgia's hospital at Savannah, Ga., has been appointed chief surgeon of the Central of Georgia, succeeding **Dr. Craig Barrow,** whose death is reported elsewhere in these columns.

Major Elmer B. Hull, who, for the past three years, has been on furlough from the Southern Classification Committee for service in the Army of the United States, Transportation Corps, Office of Chief of Transportation, has been elected to the office of member of the Classification Committee, succeeding **Robert E. Boyle, Jr.,** promoted.

PURCHASES AND STORES

R. W. Otte has been appointed assistant purchasing agent of the Chicago Great Western, with headquarters at Chicago.

William S. Morehead, general storekeeper of the Illinois Central System, at Chicago, has been appointed manager of stores, a change of title. **B. T. Adams,** district storekeeper at Paducah, Ky., has been named general storekeeper at that point, with jurisdiction over the general store at Paducah, and material on the Kentucky and Mississippi divisions, a change of title. The title of division storekeeper at the Markham, Ill.; Waterloo, Ia.; Centralia, Ill.; Memphis, Tenn.; and McComb, Miss., stores has been changed to district storekeeper.

OBITUARY

G. A. Marx, car shop superintendent of the Wabash, at Decatur, Ill., died suddenly at Decatur, on August 16.

T. J. Williamson, general agent of the Erie, at Indianapolis, Ind., died at Indianapolis on August 18.

R. L. Abbihl, 67, coal traffic agent of the Chesapeake & Ohio at Cincinnati, Ohio, died on August 20, at Cincinnati.

W. T. Welch, assistant superintendent-chief dispatcher of the Pensacola division of the Louisville & Nashville, at Pensacola, Fla., died recently.

Dr. Craig Barrow, chief surgeon of the Central of Georgia for the past twenty-eight years, died in Savannah, Ga., on August 31. He was 69 years old.

J. L. Umshler, who since May has been on leave of absence from his duties as superintendent of the Peoria & Pekin Union, at Peoria, Ill., died after a long illness, at his home in Chillicothe, Ill., on September 5.

Robert J. Walker, dairy traffic manager of the Chicago, Milwaukee, St. Paul & Pacific, died on September 9, of a heart attack in Chicago. Mr. Walker, who was 84, had been an employee of the Milwaukee for nearly 60 years.

Dr. Edward V. Milholland, medical and surgical director of the Baltimore & Ohio at Baltimore, Md., died at a hospital in that city on September 11. Dr. Milholland, who would have been 72 years old on November 17, had been with the B. & O. since January 31, 1910.

SCHOOL ON WHEELS. — Specially converted by the Canadian National more than 20 years ago to bring educational facilities to families of C. N. R. men on the 150-mile section of the Capreol division in Ontario, School Car No. 1, the "Little Green Schoolhouse on Wheels," again has emerged from the railway's car shops at London, Ont., after a "thorough renovation." The car will be moved to Clinton, Ont., where it will be equipped by the Ontario board of education for another school term.

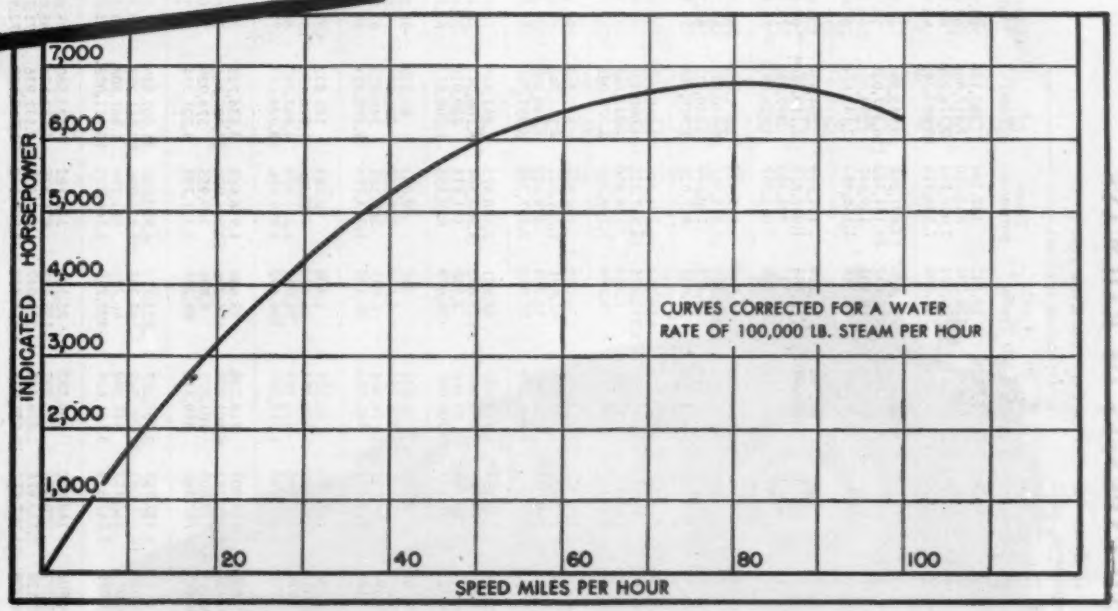
Table of Revenues and Expenses begins on next left-hand page

6552 INDICATED HORSEPOWER

The Franklin System of Steam Distribution

applied to

The Pennsylvania Railroad's T-1 Locomotives



Ralph P. Johnson, Chief Engineer of the Baldwin Locomotive Works says:

"The maximum indicated horsepower of the T-1 locomotive is 40 percent higher than that of any locomotive previously tested at Altoona. The graph shows the maximum indicated horsepower of the T-1 locomotive at various speeds, based on a steam supply of 100,000 pounds per hour."

From paper read before the New York Railroad Club on May 17, 1945.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK • CHICAGO

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1945

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income: 1945	1944
Akron, Canton & Youngstown	July	171	310,114	227	333,582	103,703	37,682	18,547	107,384	283,156	84.9	50,426	19,671	12,981	74,629
	7 mos.	171	2,680,118	1,107	2,797,753	549,021	264,496	131,281	843,650	1,917,864	68.6	879,889	367,554	360,498	481,195
Alton	July	959	1,967,791	803,417	3,121,144	458,181	480,363	70,961	1,040,794	2,176,778	69.7	944,366	379,764	368,499	171,214
	7 mos.	959	15,181,207	4,897,492	22,546,023	2,815,983	3,347,852	507,686	7,504,414	15,083,247	66.9	7,462,776	2,925,699	3,136,825	2,424,107
Atchison, Topeka & Santa Fe System	July	13,115	39,708,314	9,098,647	51,742,139	7,549,580	8,465,521	711,550	13,621,260	30,955,594	59.8	20,786,545	14,116,064	5,463,145	4,796,876
	7 mos.	13,115	251,180,826	61,591,272	333,830,029	45,716,727	53,511,396	4,486,817	88,181,582	196,597,032	58.9	137,232,997	97,361,020	35,934,877	29,589,998
Atlanta & West Point	July	93	244,321	159,601	443,174	43,026	59,748	10,591	159,847	293,093	66.1	150,081	97,049	31,621	33,597
	7 mos.	93	1,947,020	937,413	3,182,172	344,910	437,640	76,146	1,156,463	2,149,826	67.6	1,032,346	636,745	217,500	227,983
Western of Alabama	July	133	271,082	161,810	468,378	57,801	66,746	10,114	141,650	294,936	63.0	173,442	131,411	42,121	48,414
	7 mos.	133	1,868,722	982,241	3,097,316	417,931	469,609	75,185	1,032,855	2,119,574	68.4	977,742	680,866	270,094	331,297
Atlanta, Birmingham & Coast	July	639	678,815	56,453	762,613	111,993	118,371	28,537	305,382	595,247	78.1	167,366	97,557	25,333	41,630
	7 mos.	639	4,795,207	351,245	5,387,328	797,191	802,894	211,788	2,041,747	4,026,981	74.8	1,360,347	780,622	293,567	247,268
Atlantic Coast Line	July	4,935	6,044,001	3,330,707	10,023,481	2,219,290	2,363,733	197,041	3,817,956	9,012,334	89.9	1,011,147	750,000	69,413	688,302
	7 mos.	4,935	58,406,164	24,269,112	88,122,920	13,242,586	16,074,141	1,414,469	27,845,567	61,450,910	69.7	26,672,010	18,350,000	5,194,094	9,322,540
Charleston & Western Carolina	July	343	380,190	22,580	411,582	96,280	66,614	10,471	150,699	330,312	80.3	81,270	40,000	42,390	75,396
	7 mos.	343	2,372,686	122,434	2,557,293	458,444	454,702	73,831	897,030	1,929,609	75.5	627,684	310,000	287,948	545,538
Baltimore & Ohio	July	6,130	26,041,502	4,218,349	31,955,830	4,733,761	6,580,771	534,364	10,891,416	23,869,230	74.7	8,086,600	3,615,665	3,843,564	4,312,628
	7 mos.	6,131	184,932,892	29,215,575	225,894,743	29,738,581	45,817,952	3,712,475	76,947,277	164,060,438	72.6	61,834,305	30,178,276	26,801,907	27,222,403
Staten Island Rapid Transit	July	29	264,079	154,688	432,556	103,585	47,951	1,964	156,406	333,665	77.1	98,891	19,470	56,654	108,465
	7 mos.	29	2,306,875	986,221	3,366,708	400,467	338,539	10,284	1,149,316	2,076,045	61.7	1,290,663	462,909	610,555	755,537
Bangor & Aroostook	July	602	476,208	112,495	626,318	176,363	134,613	6,070	184,876	537,142	85.8	89,176	73,976	48,032	64,171
	7 mos.	602	5,788,352	532,507	6,562,600	1,242,223	922,025	43,881	1,714,821	4,163,743	63.4	2,398,857	1,716,453	738,584	897,673
Bessemer & Lake Erie	July	214	2,172,552	2,253	2,188,482	148,641	759,800	13,384	379,412	1,340,243	61.2	848,239	405,194	611,606	742,855
	7 mos.	214	10,645,407	16,683	10,764,961	1,008,664	5,236,179	92,989	2,337,232	8,957,760	83.2	1,807,201	1,331,019	2,075,233	2,438,695
Boston & Maine	July	1,789	4,566,601	2,030,944	7,242,778	1,221,754	1,169,492	88,831	2,540,473	5,261,935	72.7	1,980,843	866,104	877,522	1,015,491
	7 mos.	1,789	34,297,376	11,156,861	49,963,892	8,273,926	9,039,009	625,652	18,503,564	38,166,347	76.4	11,797,545	4,899,264	4,715,823	5,809,438
Burlington, Rock Island	July	228	216,102	78,926	314,727	50,760	45,466	3,595	111,515	229,019	72.8	85,708	8,814	25,606	88,023
	7 mos.	228	1,319,719	505,854	1,945,373	221,134	206,697	26,678	639,355	1,200,531	61.7	744,844	55,243	391,347	333,365
Cambria & Indiana	July	35	149,510	.....	149,587	12,590	46,948	597	19,061	87,339	58.39	62,248	105,614	52,110	49,297
	7 mos.	35	960,366		961,002	83,747	326,354	4,193	128,242	591,946	61.6	369,056	644,869	348,810	371,877
Canadian Pacific Lines in Maine	July	234	354,409	138,298	537,993	78,253	74,094	6,651	168,155	340,473	63.3	197,520	21,749	85,120	33,652
	7 mos.	234	3,310,768	622,410	4,163,198	514,441	541,514	46,425	1,314,704	2,495,954	60.0	1,667,244	155,488	911,434	1,078,484
Canadian Pacific Lines in Vermont	July	90	94,706	19,162	126,708	35,709	25,324	2,408	92,884	161,832	127.7	—35,124	9,587	—80,535	—60,878
	7 mos.	90	604,534	117,910	808,045	256,799	210,393	16,919	702,409	1,222,122	151.2	—414,077	71,544	—746,552	—607,975
Central of Georgia	July	1,815	2,013,310	661,049	2,954,989	510,198	621,164	71,082	1,211,373	2,563,397	86.7	391,592	180,714	171,153	730,093
	7 mos.	1,815	16,124,744	5,040,691	23,417,130	3,291,990	4,315,209	506,492	8,893,986	18,024,662	77.0	5,392,468	1,763,436	3,246,138	3,781,151
Central of New Jersey	July	654	3,707,175	696,704	4,755,627	549,903	818,236	58,684	1,916,665	3,534,723	74.3	1,220,904	407,989	409,755	721,163
	7 mos.	654	28,448,562	4,174,828	34,866,434	3,529,783	6,161,929	414,226	13,966,970	25,305,766	72.6	9,560,668	3,903,371	3,830,811	2,991,640
Central Vermont	July	422	563,255	107,000	728,119	129,800	101,225	9,805	309,955	574,929	79.0	153,190	37,273	63,666	177,961
	7 mos.	422	3,919,455	539,000	4,848,429	767,540	850,816	68,255	2,331,784	4,221,234	87.1	627,195	208,505	20,697	551,004
Chesapeake & Ohio	July	3,077	14,717,829	2,235,870	17,688,253	2,537,587	3,705,287	223,978	4,982,606	11,997,039	67.8	5,691,214	3,496,261	2,565,133	2,772,993
	7 mos.	3,077	108,254,703	11,376,041	123,994,959	16,506,053	27,291,549	1,761,395	35,114,096	84,561,278	68.2	39,433,681	24,699,534	18,589,520	19,446,627
Chicago & Eastern Illinois	July	912	1,823,379	570,924	2,618,925	346,155	418,899	66,291	921,799	1,861,508	71.1	757,417	316,200	231,321	219,335
	7 mos.	912	13,036,584	3,958,960	18,620,077	2,243,831	3,161,624	492,259	6,566,325	13,211,028	71.0	5,409,049	2,294,800	1,745,001	2,185,432
Chicago & Illinois Midland	July	131	527,070	228	564,801	142,092	96,583	22,107	136,182	423,580	75.0	141,221	78,951	73,252	78,391
	7 mos.	131	3,691,373	3,734	3,895,277	570,376	633,207	159,499	976,425	2,533,174	65.0	1,362,103	850,883	560,408	573,464
Chicago & North Western	July	8,065	9,734,470	3,479,085	14,687,128	2,133,976	2,834,345	223,047	4,837,507	10,531,936	71.7	4,155,192	2,183,480	2,002,763	1,868,221
	7 mos.	8,069	66,286,800	21,411,179	98,349,900	13,787,652	19,071,838	1,551,817	33,700,540	71,718,150	72.9	26,631,750	13,960,970	13,148,200	13,718,614
Chicago, Burlington & Quincy	July	8,964	17,700,861	3,220,153	22,741,637	4,066,410	3,292,363	279,058	5,497,984	13,703,539	60.3	9,038,098	6,235,146	2,556,414	1,714,999
	7 mos.	8,980	115,180,723	20,798,461	148,202,077	21,679,189	20,836,145	2,018,292	35,835,713	84,266,527	56.9	63,935,550	43,363,327	18,898,865	14,384,367
Chicago Great Western	July	1,500	1,975,756	263,951	2,439,410	400,342	353,213	66,208	931,932	1,828,676	75.0	610,734	245,316	213,825	234,388
	7 mos.	1,500	14,710,562	1,540,028	17,599,664	2,698,443	2,378,293	458,797	6,532,849	12,588,676	71.5	5,010,988	2,280,606	1,671,023	1,895,969
Chicago, Indianapolis & Louisville	July	541	814,634	50,534	921,153	113,497	181,916	34,376	313,026	680,641	73.9	240,513	47,698	145,540	183,183
	7 mos.	541	6,362,088	462,537	7,286,995	814,085	1,334,857	238,598	2,353,898	5,010,872	68.8	2,276,123	606,653	1,295,820	1,665,661

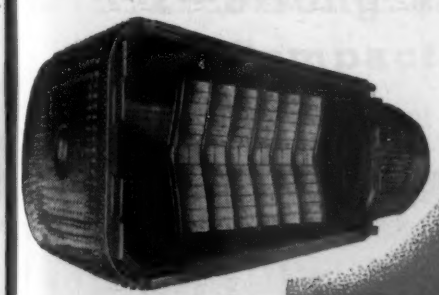
(Table continued on next left-hand page)

Eating up the miles... economically

● On the heavy haul and the long run, Security Circulators definitely improve locomotive performance.

In addition to improving the circulation of water over the crown sheet and in the side water-legs, Security Circulators reduce honeycombing, flue plugging and cinder cutting.

Security Circulators permit the use of a 100% arch, prolong the life of arch brick, and also act as struts or stays, bracing the firebox against undue distortion.



AMERICAN ARCH COMPANY, INC.

NEW YORK · CHICAGO

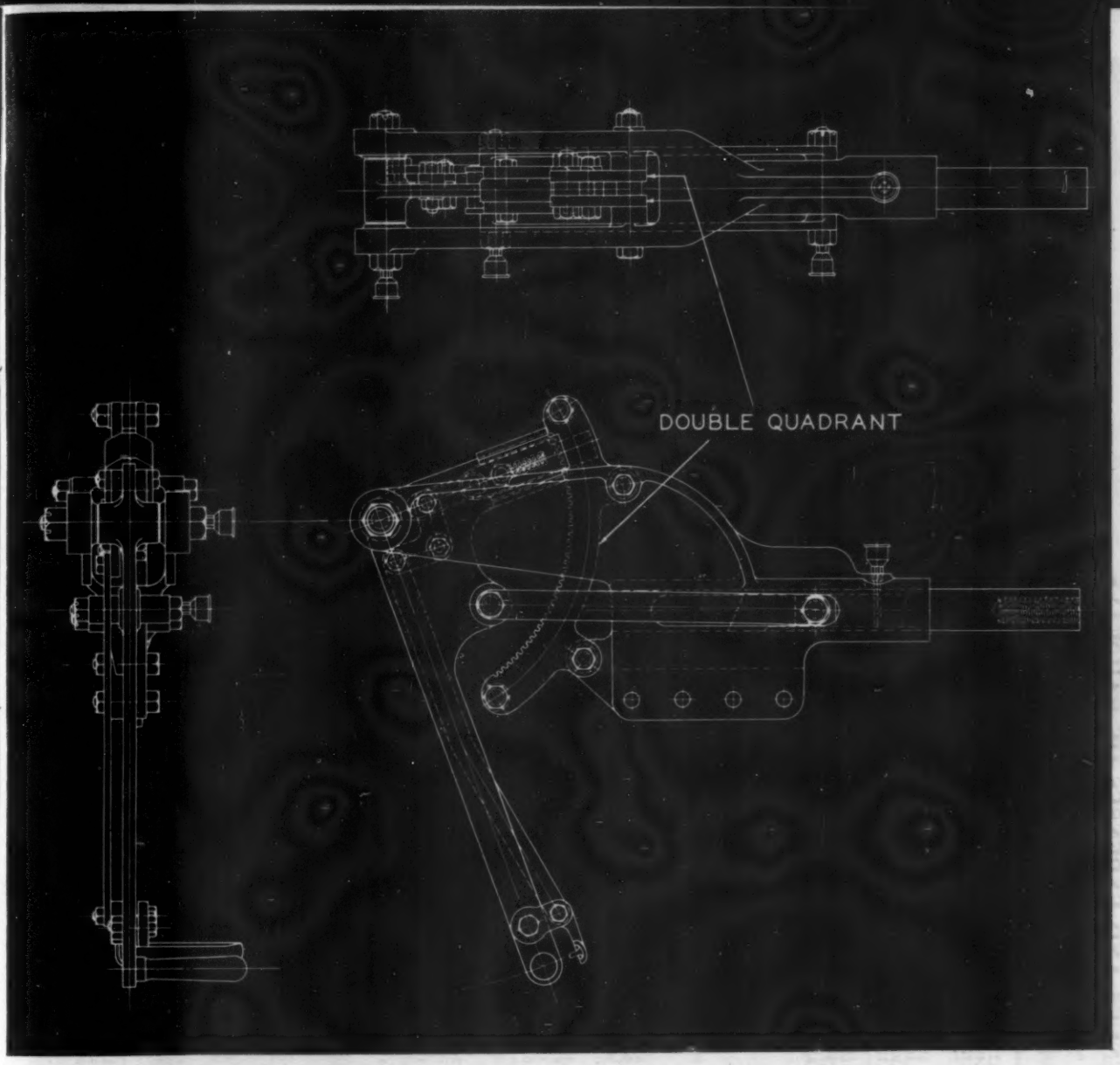
SECURITY CIRCULATOR DIVISION

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1945—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues			Operating expenses					Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income	
			Freight	Passenger	Total (inc. misc.)	Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total				1945	1944
Chicago, Milwaukee, St. Paul & Pacific	July	10,730	14,477,232	3,493,182	19,998,586	4,900,399	3,176,617	284,213	6,631,404	15,705,510	78.5	4,293,076	1,563,000	2,383,495	2,544,768
	7 mos.	10,724	102,499,621	19,191,317	135,203,648	26,014,617	22,258,058	2,106,010	44,721,808	99,922,913	73.9	35,280,735	17,045,000	17,068,419	17,790,066
Chicago, Rock Island & Pacific	July	7,753	13,337,187	3,973,027	18,561,213	3,105,362	2,481,166	351,232	5,011,000	11,562,600	62.3	6,998,613	3,455,013	2,872,247	3,020,182
	7 mos.	7,750	85,354,571	24,190,133	118,072,335	16,399,313	16,447,820	2,455,712	33,339,521	72,851,216	61.7	45,221,119	24,626,259	16,885,680	17,414,097
Chicago, St. Paul, Minneapolis & Omaha	July	1,617	1,683,177	446,913	2,362,553	268,003	359,372	40,567	905,260	1,659,105	70.2	703,448	239,288	395,937	217,664
	7 mos.	1,617	11,786,457	2,560,638	15,746,562	2,196,857	2,373,118	285,778	6,408,351	11,834,828	75.1	3,911,734	1,408,163	2,089,280	1,747,210
Clinchfield	July	302	1,084,278	14,577	1,107,589	113,029	198,887	20,839	244,448	598,271	54.0	509,318	132,544	414,235	465,593
	7 mos.	302	8,298,802	77,785	8,437,713	696,665	1,379,592	156,294	1,860,963	4,242,197	50.3	4,195,516	928,552	3,445,466	3,663,862
Colorado & Southern	July	748	1,063,213	258,931	1,422,509	222,848	214,595	17,952	451,209	953,563	67.0	468,946	142,203	264,304	135,325
	7 mos.	748	6,746,362	1,837,091	9,305,388	1,372,405	1,527,783	125,399	2,906,846	6,270,973	67.4	3,034,415	1,142,620	1,516,184	1,695,797
Fort Worth & Denver City	July	804	1,126,961	413,249	1,646,171	360,368	198,507	25,330	416,482	1,057,891	64.3	588,280	309,121	200,403	468,192
	7 mos.	804	6,171,246	2,851,666	9,786,124	2,289,054	1,414,978	189,249	2,522,563	6,832,263	69.8	2,953,861	1,711,027	929,670	1,842,935
Colorado & Wyoming	July	42	74,563	.....	124,059	13,949	16,520	666	45,141	81,298	65.5	42,761	22,234	20,047	35,508
	7 mos.	42	543,788	.....	903,081	95,865	136,620	5,251	345,314	615,708	68.1	287,373	151,983	136,046	239,030
Columbus & Greenville	July	168	107,419	9,372	123,599	30,699	21,543	3,965	46,812	117,741	95.3	5,858	7,317	1,193	8,513
	7 mos.	168	859,811	61,962	979,085	234,663	138,454	31,993	326,748	835,466	85.3	143,619	104,412	53,927	61,394
Delaware & Hudson	July	846	3,610,418	250,977	3,986,300	547,809	983,660	46,629	1,395,122	3,093,620	77.6	892,680	477,022	399,162	643,364
	7 mos.	846	26,101,480	1,331,553	28,217,621	3,553,556	7,372,872	340,273	10,166,933	22,263,162	78.9	5,954,459	2,564,396	3,006,507	5,186,906
Delaware, Lackawanna & Western	July	973	4,868,028	1,071,135	6,537,045	898,794	1,115,849	117,632	2,576,625	4,909,082	75.1	1,627,963	777,000	768,719	2,865,890
	7 mos.	973	34,019,801	6,375,226	44,591,302	5,493,859	7,734,632	811,011	19,180,371	34,529,039	77.4	10,062,263	6,228,633	2,775,482	7,301,643
Denver & Rio Grande Western	July	2,386	6,245,943	964,969	7,492,089	757,152	1,228,141	99,501	2,025,474	4,321,441	57.7	3,170,648	1,710,771	1,285,730	878,033
	7 mos.	2,386	38,501,359	5,599,835	45,921,479	4,733,650	8,056,870	698,106	12,725,709	27,605,723	60.1	18,315,756	9,221,558	8,402,345	7,941,940
Denver & Salt Lake	July	232	280,796	12,410	305,336	55,394	49,896	3,088	85,921	205,560	67.3	99,776	30,125	113,879	43,213
	7 mos.	232	1,645,160	62,830	1,782,320	322,453	381,529	23,195	592,062	1,404,067	78.8	378,253	209,517	534,718	437,159
Detroit & Mackinac	July	230	62,515	13,563	84,880	18,223	15,058	991	31,328	69,143	81.5	15,737	4,602	7,741	—840
	7 mos.	230	434,698	73,642	564,444	138,669	111,842	5,812	219,912	502,645	89.1	61,799	30,608	9,051	17,262
Detroit & Toledo Shore Line	July	50	294,010	.....	295,549	43,304	26,303	9,184	97,756	184,727	62.5	110,822	19,937	43,550	49,609
	7 mos.	50	2,585,752	.....	2,596,911	261,733	204,713	71,787	725,996	1,325,407	51.0	1,271,504	455,606	391,020	412,441
Detroit, Toledo & Ironton	July	464	586,290	1,755	619,623	101,268	137,505	15,070	194,727	474,963	76.7	144,660	70,010	77,966	125,184
	7 mos.	464	5,272,354	10,491	5,479,644	674,358	869,092	107,063	1,482,528	3,316,207	60.5	2,163,437	967,662	1,192,111	1,248,623
Duluth, Missabe & Iron Range	July	546	5,027,496	7,592	5,808,832	405,969	545,291	5,016	995,449	1,991,642	34.3	3,817,190	1,731,341	2,099,145	2,268,033
	7 mos.	546	18,670,224	38,685	21,602,567	2,643,815	3,877,478	34,980	4,536,923	11,388,882	52.7	10,213,685	4,898,808	5,408,322	5,462,515
Duluth, Winnipeg & Pacific	July	175	238,000	3,900	247,000	54,270	30,869	2,373	92,194	183,895	74.5	63,105	16,329	22,423	—22,742
	7 mos.	175	1,570,000	18,300	1,621,200	334,114	216,088	16,770	656,878	1,252,464	77.3	368,736	127,569	52,275	262,556
Elgin, Joliet & Eastern	July	392	2,143,036	26	2,562,149	310,754	783,706	17,812	965,557	2,146,967	83.8	415,182	220,155	118,562	303,100
	7 mos.	392	17,824,697	318	20,693,837	1,940,120	5,446,100	122,194	7,168,956	15,132,367	73.1	5,561,470	2,622,905	2,366,563	1,827,783
Erie	July	2,243	10,488,126	1,372,490	12,684,167	1,500,582	2,127,877	226,844	4,809,398	9,474,873	74.7	3,209,294	1,298,507	1,329,372	1,390,689
	7 mos.	2,243	75,427,495	6,928,928	88,010,641	8,994,061	15,744,054	1,649,934	34,511,124	64,441,373	73.2	23,569,268	8,787,570	9,945,511	12,255,373
Florida East Coast	July	682	775,226	1,025,494	1,986,368	327,021	377,075	51,227	684,342	1,576,099	79.3	410,269	112,631	255,964	365,407
	7 mos.	682	9,376,701	8,193,648	19,143,025	2,357,433	2,289,949	385,745	5,606,896	11,552,600	60.3	7,590,425	3,523,800	3,331,535	4,206,673
Georgia Railroad	July	328	658,718	159,275	858,268	87,446	155,646	21,429	326,734	613,110	71.4	245,158	33,677	210,164	296,092
	7 mos.	328	4,372,366	1,024,400	5,709,698	700,856	962,710	156,262	2,247,951	4,228,634	74.1	1,481,064	231,628	1,247,795	1,883,580
Georgia & Florida	July	408	178,746	6,064	190,942	55,141	26,158	10,653	66,804	166,251	87.1	24,691	10,867	3,226	6,499
	7 mos.	408	1,273,136	37,037	1,347,423	349,420	198,067	75,289	478,353	1,155,201	85.7	192,222	76,716	46,541	84,377
Grand Trunk Western	July	1,026	2,514,000	366,000	3,144,000	657,060	499,474	37,475	1,228,339	2,532,790	80.6	611,210	196,077	387,973	370,148
	7 mos.	1,026	18,094,000	2,203,000	21,717,000	3,862,314	3,645,131	261,522	8,590,986	17,125,902	78.9	4,591,098	1,422,635	2,853,706	3,021,365
Canadian National Lines in New England	July	172	184,600	28,000	229,300	60,481	25,544	2,252	105,490	212,668	92.7	16,632	21,189	—45,743	—90,368
	7 mos.	172	1,171,400	86,600	1,435,800	350,234	203,248	15,877	720,462	1,458,465	101.6	—22,665	148,323	—455,776	—626,307
Great Northern	July	8,371	17,051,386	1,720,595	20,132,829	3,009,983	3,051,430	236,946	4,865,669	11,632,633	57.8	8,500,196	2,425,925	5,759,371	3,561,566
	7 mos.	8,371	99,278,506	10,916,776	118,827,995	19,964,980	22,494,311	1,657,261	32,338,989	79,693,314	67.1	39,134,681	22,097,462	16,934,537	15,567,067
Green Bay & Western	July	234	227,489	825	234,234	71,512	23,391	8,906	77,640	187,784	80.1	46,450	36,874	22	5,849
	7 mos.	234	1,564,091	3,615	1,613,954	472,317	163,225	117,785	517,877	1,279,060	79.2	334,894	235,412	52,485	118,715
Gulf & Ship Island	July	259	239,453	48,007	303,990	54,606	26,127	2,797	100,929	190,378	62.6	113,612	75,096	21,188	71,985
	7 mos.	259	1,478,193	306,577	1,957,825	356,545	199,453	19,759	702,835	1,337,120	68.3	620,705	236,539	272,356	253,519

(Table continued on next left-hand page)



The American *Double-Quadrant* Throttle Lever Assembly Provides

1—Fine throttle adjustments
2—Strong and durable quadrant teeth
3—Compactness—more headroom

Specify the double-quadrant throttle lever assembly for existing and contemplated power.

AMERICAN THROTTLE COMPANY, INC.

60 East 42nd Street
NEW YORK 17, N.Y.

Sales Representatives:
THE SUPERHEATER COMPANY
Canada: The Superheater Company, Ltd., Montreal

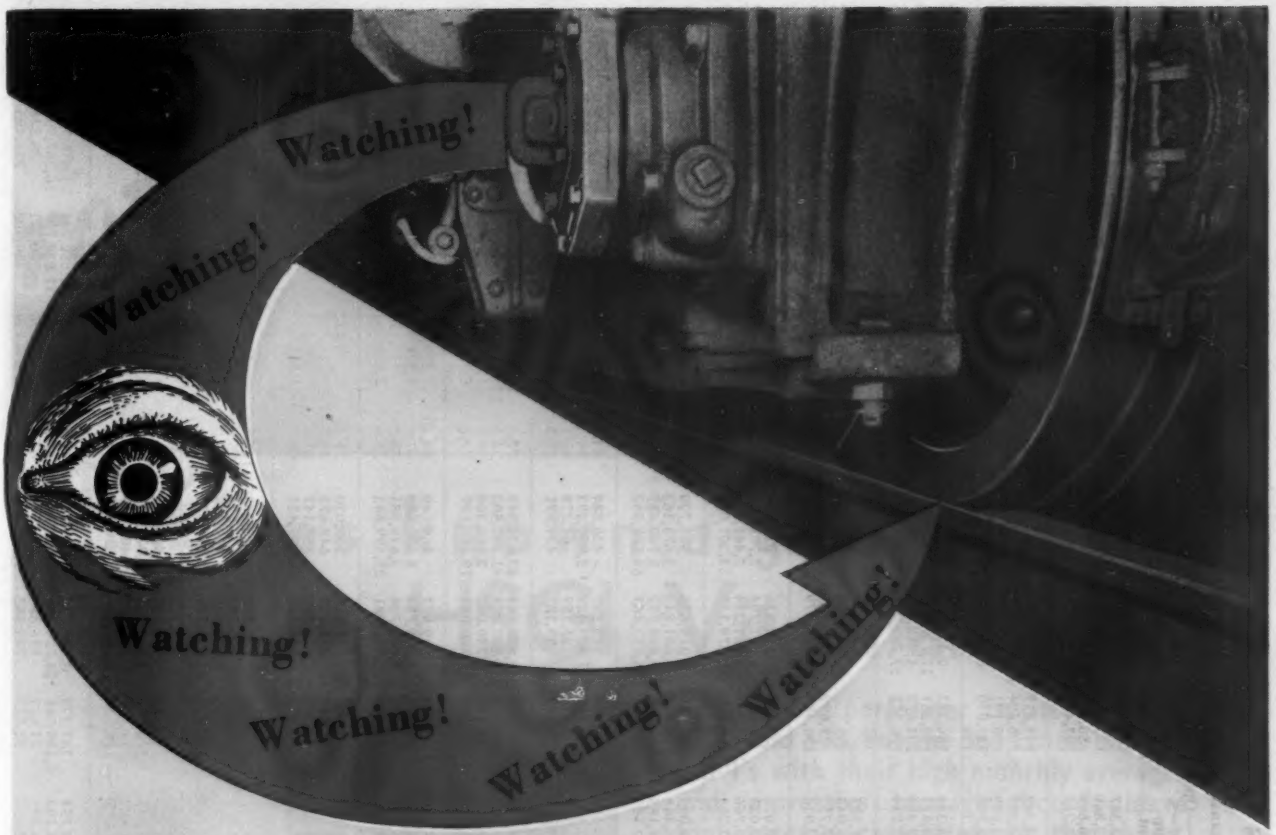
122 S. Michigan Blvd.
CHICAGO 3, ILL.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1945—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1945	1944
Gulf, Mobile & Ohio	July	1,945	$3,067,561	$257,598	$3,432,208	$559,000	$604,743	$86,423	$996,764	$2,373,834	69.2	$1,058,374	$586,477	$282,848	$391,397
	7 mos.	1,943	21,075,168	1,494,266	23,299,590	3,508,382	3,805,589	605,406	6,194,210	15,016,570	64.5	8,283,020	4,721,931	2,532,911	2,760,637
Illinois Central	July	4,822	13,750,094	3,559,066	18,435,217	2,959,005	2,920,544	215,404	5,164,983	11,955,855	64.9	6,479,362	4,618,573	1,649,864	1,728,243
	7 mos.	4,823	101,535,395	19,738,041	129,391,042	18,022,268	22,674,708	1,525,604	36,971,659	83,876,769	64.8	45,514,273	28,879,588	15,033,503	15,783,038
Yazoo & Mississippi Valley	July	1,524	2,175,097	398,603	2,694,667	454,303	325,342	36,278	849,361	1,750,808	65.0	943,859	276,451	575,400	607,354
	7 mos.	1,524	17,050,472	2,385,296	20,506,735	3,503,594	2,362,982	262,504	6,152,267	12,931,643	63.1	7,575,092	4,200,566	2,655,579	2,691,772
Illinois Central System	July	6,346	15,925,191	3,957,669	21,129,884	3,413,308	3,245,886	251,682	6,014,344	13,706,663	64.9	7,423,221	4,900,189	2,230,177	2,343,509
	7 mos.	6,346	118,585,867	22,123,337	149,897,777	21,525,862	25,037,690	1,788,108	43,123,926	96,808,412	64.6	53,089,365	33,120,394	17,727,472	18,511,200
Illinois Terminal	July	476	621,683	192,925	895,766	135,111	111,887	19,872	295,819	588,455	65.69	307,311	186,121	107,247	127,123
	7 mos.	476	5,164,511	1,233,886	6,931,898	762,780	811,973	140,687	2,104,245	4,016,104	57.94	2,915,794	1,918,472	832,024	795,055
Kansas City Southern	July	890	2,631,095	270,871	3,118,511	458,849	439,002	66,468	871,916	1,968,153	63.1	1,150,358	475,000	454,690	416,000
	7 mos.	890	20,253,982	1,882,472	23,586,482	2,991,175	3,155,000	455,693	6,294,751	13,790,464	58.5	9,796,018	4,785,000	3,561,731	3,252,191
Kansas, Oklahoma & Gulf	July	328	428,515	1,986	434,208	50,198	25,465	10,207	87,181	185,302	42.7	248,906	115,297	103,233	62,150
	7 mos.	328	2,692,625	13,134	2,731,561	335,929	184,127	70,176	587,942	1,259,125	46.1	1,472,436	655,945	638,985	551,587
Lake Superior & Ishpeming	July	156	314,499	164	382,601	40,374	26,736	866	67,383	142,863	37.3	239,738	112,953	134,868	183,419
	7 mos.	156	1,307,746	945	1,574,466	239,951	227,875	4,843	357,060	887,237	56.4	687,229	405,257	346,329	380,214
Lehigh & Hudson River	July	96	260,658	3	261,572	45,860	42,020	5,191	79,714	179,718	68.7	81,854	37,633	22,130	17,554
	7 mos.	96	1,936,088	Dr. 991	1,940,187	276,048	294,423	38,717	601,266	1,259,332	64.9	680,855	328,842	172,415	170,062
Lehigh & New England	July	190	461,095	.....	465,731	73,687	128,760	7,710	143,739	374,075	80.3	91,656	50,552	57,959	119,318
	7 mos.	190	3,133,205	.....	3,162,077	371,510	917,436	55,080	1,039,291	2,524,692	79.8	637,385	322,227	472,779	771,500
Lehigh Valley	July	1,260	5,302,917	813,659	6,508,850	891,275	1,136,666	117,368	2,638,168	4,980,610	76.5	1,528,240	235,574	986,459	1,218,110
	7 mos.	1,260	40,838,839	4,560,171	48,446,402	6,802,151	8,828,981	856,127	20,104,683	38,207,845	78.9	10,238,557	4,210,091	2,910,571	6,371,419
Louisiana & Arkansas	July	834	1,529,785	166,803	1,746,475	237,503	179,465	36,125	386,641	892,297	51.1	854,178	481,768	289,647	212,503
	7 mos.	834	11,205,850	1,039,205	12,640,981	2,158,371	1,371,242	244,676	2,746,432	6,886,156	54.5	5,754,825	3,551,330	1,659,649	1,258,231
Louisville & Nashville	July	4,754	12,985,450	3,359,586	17,269,205	2,018,962	3,328,075	216,222	5,477,324	11,613,381	67.2	5,655,824	3,640,841	2,351,936	2,006,955
	7 mos.	4,755	94,035,513	22,861,987	124,182,214	13,482,576	21,683,545	1,547,139	38,487,187	79,070,481	63.7	45,111,733	32,361,216	15,050,303	14,454,905
Maine Central	July	988	1,274,337	422,324	1,832,030	566,566	284,219	14,785	595,326	1,509,402	82.4	322,628	163,053	127,204	119,693
	7 mos.	988	9,468,997	2,034,927	12,333,626	2,583,844	2,189,269	98,405	4,331,707	9,558,615	77.5	2,775,011	1,368,448	1,083,503	1,081,429
Midland Valley	July	334	178,809	655	181,546	34,075	14,791	2,473	49,033	104,846	57.8	76,700	26,071	41,463	22,310
	7 mos.	334	1,012,606	982	1,030,279	194,188	98,861	17,735	328,500	671,865	65.2	358,414	120,594	174,628	137,296
Minneapolis & St. Louis	July	1,408	1,137,154	40,237	1,227,241	332,512	220,796	64,590	381,581	1,058,114	86.2	169,127	106,096	44,512	88,458
	7 mos.	1,408	8,245,057	266,896	8,854,646	1,781,146	1,443,507	456,308	2,734,183	6,820,868	77.0	2,033,778	1,151,579	888,979	1,033,574
Minneapolis, St. Paul & Sault Ste. Marie	July	3,224	2,193,695	185,867	2,563,604	477,430	338,604	40,731	889,960	1,815,672	70.8	747,932	403,603	437,382	581,771
	7 mos.	3,224	12,222,859	1,061,111	14,381,935	2,718,739	2,631,562	280,067	5,720,606	11,823,208	82.2	2,558,727	1,600,658	1,388,796	4,072,821
Duluth, South Shore & Atlantic	July	550	293,762	29,483	348,882	86,296	50,621	10,810	134,268	289,795	83.1	59,087	20,446	37,019	23,517
	7 mos.	550	2,160,714	151,069	2,486,458	480,411	416,330	78,409	969,425	2,001,599	80.5	484,859	122,787	345,291	389,747
Spokane International	July	152	168,658	5,991	184,016	44,418	16,635	3,378	46,490	118,096	64.2	65,920	30,563	24,762	20,329
	7 mos.	152	1,228,401	33,422	1,330,700	291,464	107,342	22,831	312,229	784,634	59.0	546,066	300,637	166,424	138,544
Mississippi Central	July	158	144,824	7,316	155,032	33,320	17,140	8,461	41,806	107,243	69.2	47,789	14,167	18,785	26,726
	7 mos.	158	1,094,089	28,840	1,150,922	234,128	129,262	63,339	285,051	760,836	64.0	390,086	135,645	167,190	227,242
Missouri & Arkansas	July	365	165,516	2,599	175,806	53,975	26,176	7,333	87,226	181,716	103.4	—5,910	7,761	—45,821	34,146
	7 mos.	365	1,339,765	14,929	1,412,688	476,893	180,815	54,415	630,153	1,392,412	98.6	20,276	56,564	—254,538	134,426
Missouri-Illinois	July	172	324,216	824	326,412	61,413	36,946	4,477	86,686	198,296	60.8	128,116	82,187	37,512	35,849
	7 mos.	172	2,025,483	3,705	2,037,988	307,131	265,509	31,376	497,267	1,142,782	56.1	895,206	612,134	259,256	219,558
Missouri-Kansas-Texas Lines	July	3,253	5,937,809	1,122,735	7,582,494	1,879,157	905,965	154,493	2,053,561	5,252,981	69.3	2,329,513	1,414,494	511,548	423,156
	7 mos.	3,253	41,754,995	7,105,005	52,781,322	11,727,738	6,125,755	1,043,158	14,741,604	35,338,970	67.0	17,442,352	10,368,184	4,263,743	4,096,960
Missouri Pacific	July	7,082	16,276,471	2,625,954	20,269,833	2,786,677	2,838,872	303,660	5,534,527	12,023,739	59.3	8,246,094	4,789,677	2,658,260	2,954,009
	7 mos.	7,082	104,792,251	19,324,065	133,940,626	15,832,876	19,326,941	2,135,970	37,783,297	78,942,256	58.9	54,998,370	30,982,801	19,057,467	18,936,559
Gulf Coast Lines	July	1,734	2,469,108	289,991	2,872,433	502,364	373,770	63,137	855,886	1,980,707	68.9	891,726	.....	264,529	435,636
	7 mos.	1,734	24,456,368	2,103,062	27,600,204	4,343,404	2,595,049	393,435	6,789,268	14,735,792	53.4	12,864,412	.....	3,697,280	4,449,843
International-Great Northern	July	1,110	1,809,503	498,090	2,574,068	500,774	350,877	37,089	870,419	1,857,180	72.1	716,888	273,942	252,005	300,831
	7 mos.	1,110	12,597,859	3,263,095	17,583,085	3,240,242	2,441,792	260,212	5,843,403	12,467,445	70.9	5,115,640	1,789,732	2,088,753	2,037,137
Monongahela	July	170	539,064	2,805	545,226	62,511	47,714	679	138,079	253,976	46.6	291,250	74,861	116,524	76,750
	7 mos.	170	3,520,535	15,827	3,559,952	473,102	333,079	4,567	986,881	1,825,186	51.3	1,734,766	522,951	573,341	824,176

(Table continued on next left-hand page)



On Guard

Softens the Brake When Wheel Slip Impends

THE "AP" Decelostat keeps tab of the wheel whether moving forward or back. It rolls with the wheel and observes the slightest hesitation in wheel rotation when brakes are applied.

It maintains constant check on the rate of slow-down and is poised to act if this rate reaches a set limit.

And when this limit develops the Decelostat flashes the impulse to the brake cylinders — *softens the brake momentarily*, permitting the offending wheel to get into step with the others in the train.

WESTINGHOUSE AIR BRAKE CO.

WILMERDING, PENNSYLVANIA

REVENUES AND EXPENSES OF RAILWAYS

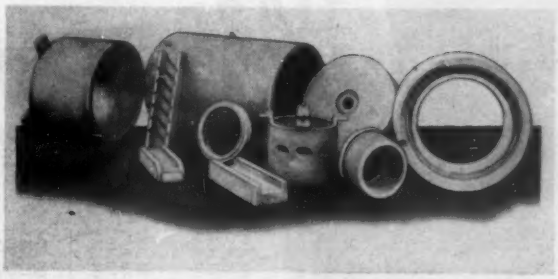
MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1945—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of—Way and structures	Maintenance of—Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income: 1945	1944
Montour	July	51	$270,970	.....	$272,136	$29,325	$62,387	$991	$75,009	$177,225	65.1	$94,911	$62,670	$68,217	$67,137
	7 mos.	51	1,688,746	.....	1,697,346	142,116	412,860	7,076	524,641	1,148,340	67.7	549,006	396,960	408,883	447,321
Nashville, Chattanooga & St. Louis	July	1,071	2,522,946	$521,254	3,294,884	663,722	696,666	86,284	1,066,601	2,613,450	79.3	681,434	510,313	168,217	169,924
	7 mos.	1,071	18,682,400	3,506,674	23,917,655	3,719,553	4,773,212	597,432	7,539,435	17,256,448	72.1	6,661,207	3,956,701	2,602,293	2,476,521
New York Central	July	10,749	36,557,459	14,050,069	56,095,214	8,553,086	10,604,342	745,857	21,003,918	43,255,253	77.1	12,839,961	6,616,104	4,927,665	5,847,435
	7 mos.	10,749	265,477,575	95,536,400	400,325,064	58,638,260	76,570,267	5,206,624	152,498,341	308,883,942	77.2	91,441,122	45,803,043	33,699,048	40,047,831
Pittsburgh & Lake Erie	July	229	2,435,118	125,907	2,647,745	364,805	943,689	46,191	1,033,481	2,498,221	94.4	149,524	434,120	366,316	467,859
	7 mos.	229	17,926,766	755,487	19,382,017	2,401,903	6,613,932	313,030	6,693,447	16,813,192	86.7	2,568,825	3,461,466	2,855,063	3,348,527
New York, Chicago & St. Louis	July	1,687	7,113,343	313,127	7,598,372	943,503	1,394,344	166,383	2,423,699	5,131,789	67.5	2,466,583	155,105	1,939,962	958,732
	7 mos.	1,687	53,626,765	1,842,765	56,625,913	6,894,938	9,494,527	1,113,261	17,727,753	36,721,368	64.8	19,904,545	5,508,886	11,408,135	6,596,811
New York, New Haven & Hartford	July	1,838	7,035,095	6,901,749	15,071,617	1,994,450	2,462,326	204,673	5,258,386	10,660,726	70.7	4,410,891	1,825,005	1,616,651	1,708,647
	7 mos.	1,838	52,880,598	43,648,115	104,694,065	12,860,405	16,833,754	1,116,272	37,289,749	73,267,251	70.0	31,426,814	12,310,005	11,380,364	14,340,531
New York Connecting	July	21	217,167	.....	239,978	55,674	11,587	.....	48,814	117,856	49.1	122,122	60,264	186,703	169,174
	7 mos.	21	1,467,640	.....	1,636,190	350,424	104,043	.....	408,220	874,909	53.5	761,281	575,049	1,119,385	1,061,026
New York, Ontario & Western	July	548	640,159	66,388	774,948	98,288	137,752	21,699	344,324	629,284	81.2	145,664	39,286	25,925	—60,062
	7 mos.	548	4,342,874	130,068	4,945,648	666,383	1,012,913	156,395	2,863,679	4,893,481	98.9	52,167	289,367	—719,734	—313,229
New York, Susquehanna & Western	July	120	322,899	41,078	380,398	35,694	39,671	4,037	134,836	233,434	61.4	146,964	48,035	60,818	60,654
	7 mos.	120	2,487,775	278,232	2,867,148	245,150	252,021	34,476	1,061,794	1,712,114	59.7	1,155,034	366,536	406,186	532,360
Norfolk & Western	July	2,161	9,824,963	1,190,988	11,361,987	1,551,951	2,550,766	167,209	2,861,254	7,461,056	65.7	3,900,931	2,906,413	1,777,770	2,158,698
	7 mos.	2,158	80,865,886	7,851,243	91,397,897	10,336,664	18,037,264	1,216,509	21,379,155	53,301,025	58.3	38,096,872	28,865,760	14,556,429	15,117,198
Norfolk Southern	July	727	573,598	28,775	620,077	142,199	78,095	29,781	219,636	503,729	81.2	116,348	51,063	42,451	103,669
	7 mos.	727	4,309,352	176,476	4,625,834	1,068,838	576,448	216,363	1,601,842	3,673,162	79.4	952,672	372,460	372,901	409,119
Northern Pacific	July	6,873	9,242,621	1,705,552	12,018,180	2,428,877	2,694,185	194,509	3,898,792	9,740,487	81.1	2,277,693	564,079	1,959,774	1,976,617
	7 mos.	6,869	66,767,514	11,056,644	84,988,588	14,419,208	18,339,121	1,338,448	26,753,861	64,607,982	76.0	20,380,606	11,216,401	11,811,926	12,633,916
Northwestern Pacific	July	331	460,736	17,780	507,279	154,441	70,152	4,364	189,507	426,884	84.2	80,395	28,617	18,270	28,985
	7 mos.	331	3,311,163	125,182	3,617,144	1,156,222	430,418	20,788	1,234,429	2,900,293	80.2	716,851	187,339	346,392	177,937
Oklahoma City-Ada-Atoka	July	132	99,189	132	100,277	27,534	3,770	1,126	25,159	61,278	61.1	38,999	13,757	11,902	21,337
	7 mos	132	751,941	1,728	761,291	167,335	30,874	8,389	189,587	424,991	55.8	336,300	128,707	109,988	207,895
Pennsylvania	July	10,112	52,527,825	22,351,652	81,311,251	10,063,319	16,129,356	1,091,665	32,874,965	63,039,943	77.5	18,271,308	8,736,264	8,771,369	9,938,711
	7 mos	10,112	385,372,673	145,626,954	575,908,408	66,671,146	108,205,800	7,360,674	238,897,015	441,342,503	76.6	134,565,905	63,808,801	63,809,305	62,610,895
Long Island	July	376	1,110,141	3,444,240	4,775,479	508,357	527,806	37,480	1,730,082	2,860,300	59.9	1,915,179	797,237	868,404	996,662
	7 mos.	376	8,181,398	16,786,023	26,388,636	3,483,967	3,692,655	137,138	11,720,084	19,486,129	73.8	6,902,507	3,064,949	1,931,203	1,386,756
Pennsylvania-Reading Seashore Lines	July	392	464,530	1,086,073	1,592,898	199,632	85,342	9,543	549,977	865,149	54.3	727,749	178,141	385,841	633,037
	7 mos.	392	3,340,198	3,338,659	6,918,544	1,120,578	706,656	57,633	3,345,754	5,391,589	77.9	1,526,955	757,390	—75,390	104,773
Pere Marquette	July	1,949	3,837,713	388,714	4,549,759	887,026	843,831	79,931	1,648,726	3,639,585	80.0	910,174	327,870	507,891	402,217
	7 mos.	1,949	29,844,482	2,055,934	33,425,804	5,686,655	6,104,897	570,435	12,033,981	25,599,843	76.6	7,825,961	2,735,785	4,477,520	2,694,688
Pittsburg & Shawmut	July	97	129,360	.....	130,142	33,009	22,345	2,102	38,141	102,030	78.4	28,112	3,725	19,217	12,299
	7 mos.	97	857,919	.....	863,121	179,707	161,013	12,839	254,139	648,672	75.2	214,449	39,614	162,165	141,432
Pittsburgh & West Virginia	July	136	516,751	.....	533,450	120,305	127,622	22,589	159,895	455,147	85.3	78,303	358,133	—257,696	126,995
	7 mos.	136	4,414,839	104	4,540,457	706,897	778,580	169,405	1,148,352	2,999,435	66.1	1,541,022	737,614	945,131	959,384
Pittsburg, Shawmut & Northern	July	190	73,413	.....	75,094	22,400	21,597	996	36,712	86,763	115.5	—11,669	6,390	—24,906	—6,037
	7 mos.	190	651,631	.....	659,284	152,027	134,863	7,481	303,543	635,614	96.4	23,670	45,325	—69,576	—42,565
Reading	July	1,367	8,113,555	982,081	9,562,598	1,312,565	2,106,033	86,930	3,274,041	6,998,958	73.2	2,563,640	1,526,558	1,197,630	1,114,169
	7 mos.	1,367	57,732,844	6,337,800	67,131,733	8,521,779	14,358,373	608,573	23,333,731	48,382,071	72.1	18,749,662	10,277,983	8,278,199	8,728,180
Richmond, Fredericksburg & Potomac	July	118	1,169,646	1,218,691	2,605,896	304,808	360,704	14,386	777,361	1,566,723	60.1	1,039,173	221,825	716,555	277,173
	7 mos.	118	10,805,146	8,075,291	20,659,773	1,863,311	2,434,247	102,521	5,815,254	10,977,707	53.1	9,682,066	6,785,328	1,899,461	2,000,482
Rutland	July	407	336,201	78,569	488,547	71,678	81,432	11,957	223,673	403,113	82.5	85,434	26,703	54,698	—8,342
	7 mos.	407	2,083,252	424,702	3,008,079	467,462	607,097	88,136	1,580,696	2,850,548	94.8	157,531	187,516	—46,853	—12,260
St. Louis-San Francisco	July	4,645	7,412,845	1,800,385	9,923,351	1,376,325	1,794,754	167,279	3,146,731	6,849,277	69.0	3,074,074	1,650,741	1,416,798	1,568,327
	7 mos	4,646	50,624,396	12,293,444	68,205,517	8,852,694	11,988,502	1,199,545	21,720,604	46,215,996	67.8	21,989,521	11,829,799	10,267,995	9,328,346
St. Louis, San Francisco & Texas	July	160	288,186	35,796	334,633	41,322	34,885	11,621	116,886	212,203	63.4	122,430	70,571	28,238	29,829
	7 mos.	160	1,958,825	265,015	2,293,715	247,865	232,657	82,037	789,662	1,405,276	61.3	888,439	460,308	233,495	273,693

(Table continued on next left-hand page)

SOO LINE has known a good thing—

HSGI Vital Parts



HSGI parts may be had rough, semi-finished, or finished. Some of the most widely used locomotive components here shown include valve and cylinder bushings, packing and bull rings; crosshead shoes; driving box shoes and wedges; pistons; side rod bushings.

A SLICK performer in its day was old 808, but the Soo Line's modern 4-8-4's with their high monthly averages and impressive tonnage records leave that veteran completely in the shade. Yet these engines do have something in common, besides the emblem on their tenders. More than a generation ago HUNT-SPILLER GUN IRON was helping to maintain Soo Line locomotives at peak efficiency. And today, though conditions are changed and power greatly improved, this same long-wearing material continues to fulfill the exacting requirements of that great Middle-Western road.

Clinching proof of quality for any product is the long-time loyalty of its users, and we are proud that 76 important railroads have been specifying HSGI parts since 1910 or before.

HUNT SPILLER GUN IRON HSGI *AIR FURNACE PROCESS*

HUNT-SPILLER MFG. CORPORATION

N. C. RAYMOND, *President* — E. J. FULLER, *Vice-Pres. & Gen. Mgr.*

383 Dorchester Ave. ★ South Boston 27, Mass.

Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.
Export Agents:
International Rwy. Supply Co., 30 Church Street, New York 7, N. Y.

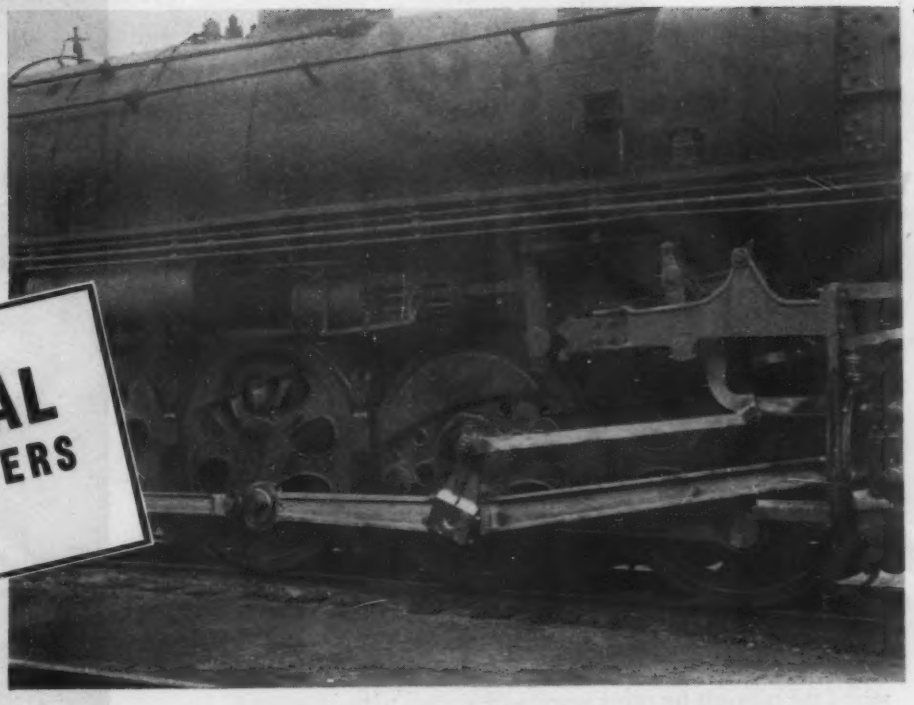
Cylinder Bushings	Crosshead Shoes	Dunbar Sectional Type Packing
Cylinder Packing Rings	Hub Liners	Duplex Sectional Type Packing
Pistons or Piston Bull Rings	Shoes and Wedges	for Cylinders and Valves
Valve Bushings	Floating Rod Bushings	(Duplex Springs for Above
Valve Packing Rings	Light Weight Valves	Sectional Packing)
Valve Bull Rings	Cylinder Liners and Pistons	Cylinder Snap Rings
	for Diesel Service	Valve Rings, All Shapes

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1945—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income: 1945	1944
St. Louis Southwestern Lines	July	1,607	$5,308,673	$315,676	$5,773,685	$616,327	$667,807	$103,452	$1,284,376	$2,810,067	48.7	$2,963,618	$1,835,919	$817,820	$834,666
	7 mos.	1,607	40,704,920	1,998,313	43,899,855	4,333,779	4,454,825	734,627	9,650,250	20,144,002	45.9	23,755,853	15,050,504	6,504,151	5,606,773
Seaboard Air Line	July	4,168	6,308,696	3,338,562	10,356,156	1,528,629	1,908,303	243,620	3,196,556	7,361,515	71.1	2,994,641	1,100,000	1,621,483	1,768,275
	7 mos.	4,170	52,732,749	22,586,697	80,570,426	10,915,365	13,514,396	1,740,428	24,644,458	54,184,304	67.3	26,386,122	12,190,000	11,335,829	13,396,384
Southern Railway	July	6,505	14,549,856	4,668,383	20,429,506	2,803,144	3,694,551	265,554	6,402,360	13,882,275	68.0	6,547,231	3,964,949	2,227,103	2,588,740
	7 mos.	6,505	111,967,051	34,712,509	155,986,130	18,868,106	25,255,582	1,854,836	44,076,149	94,804,900	60.8	61,181,230	40,193,912	18,639,583	19,154,700
Alabama Great Southern	July	315	1,278,993	334,211	1,698,817	185,129	314,607	29,721	539,825	1,120,129	65.9	578,688	369,669	138,827	158,051
	7 mos.	315	9,121,137	2,848,627	12,783,047	1,348,771	2,241,695	195,758	3,859,902	8,076,368	63.2	4,706,679	3,237,938	1,015,840	1,170,437
Cincinnati, New Orleans & Texas Pacific	July	337	2,390,197	673,941	3,204,984	325,196	705,041	39,731	897,198	2,057,634	64.2	1,147,350	754,517	436,441	443,443
	7 mos.	337	15,899,164	4,078,114	21,156,528	2,280,506	4,682,503	289,132	5,735,871	13,641,197	64.5	7,515,331	5,219,986	2,725,646	2,961,686
Georgia Southern & Florida	July	397	294,438	229,529	569,024	73,452	82,444	3,201	182,938	358,599	63.0	210,425	107,050	69,646	69,912
	7 mos.	397	2,005,982	1,604,759	3,987,200	500,664	545,659	20,134	1,229,606	2,421,494	60.7	1,565,706	839,449	483,033	404,684
New Orleans & Northeastern	July	204	798,778	169,624	1,016,674	158,698	116,148	14,662	243,742	567,188	55.8	449,486	255,574	106,442	104,697
	7 mos.	204	5,703,595	1,409,317	7,487,693	963,978	863,924	99,924	1,835,189	4,047,628	54.1	3,440,065	2,128,654	756,395	653,103
Southern Pacific	July	8,247	29,717,843	9,135,583	42,565,084	5,392,607	7,569,095	657,952	13,793,696	29,642,931	69.6	12,922,153	8,103,111	2,737,676	3,523,217
	7 mos.	8,247	206,013,661	60,329,830	291,464,128	39,051,370	53,116,745	4,645,936	91,311,982	203,203,389	69.7	88,260,739	55,493,235	21,742,514	23,074,955
Texas & New Orleans	July	4,327	7,605,197	2,159,644	10,424,725	1,354,935	1,357,612	168,149	3,071,951	6,377,187	61.2	4,047,538	2,335,158	1,178,281	858,643
	7 mos.	4,329	55,954,313	14,254,305	74,693,765	9,936,944	9,711,897	1,121,054	20,701,515	44,147,413	59.1	30,546,352	18,326,785	8,316,667	9,561,754
Spokane, Portland & Seattle	July	944	2,229,476	193,637	2,540,161	673,071	295,395	13,282	661,037	1,705,940	67.2	834,221	135,077	569,994	411,975
	7 mos.	944	14,068,206	1,230,503	16,154,280	4,209,839	1,574,418	100,650	4,447,151	10,789,945	66.8	5,364,335	1,964,574	2,277,830	1,843,226
Tennessee Central	July	286	279,912	24,536	320,333	55,938	54,430	7,358	116,622	249,236	77.8	71,097	30,114	26,147	38,781
	7 mos.	286	1,961,638	229,941	2,316,143	443,233	415,127	48,160	831,583	1,842,880	79.6	473,263	188,218	176,592	325,544
Texas & Pacific	July	1,873	5,055,599	1,554,457	7,168,821	947,550	902,534	126,499	1,778,385	4,042,362	56.4	3,126,459	1,686,409	1,144,316	530,635
	7 mos.	1,881	33,106,306	10,574,060	47,576,668	6,132,947	6,233,459	807,765	11,536,217	26,637,887	56.0	20,938,781	13,705,546	5,676,715	3,912,605
Texas-Mexican	July	162	228,776	731	253,808	17,144	18,428	4,489	55,385	106,713	42.0	147,095	16,150	117,025	48,686
	7 mos.	162	1,182,303	4,937	1,320,909	338,202	119,061	29,221	350,100	905,275	68.5	415,634	142,719	206,333	433,733
Toledo, Peoria & Western	July	239	424,522	31	430,153	53,684	24,193	24,335	87,891	203,915	47.4	226,238	19,090	181,130	228,116
	7 mos.	239	2,949,289	93	2,978,003	305,160	187,261	171,949	662,877	1,425,788	47.9	1,552,215	130,280	1,244,506	1,486,392
Union Pacific System	July	9,779	37,545,439	7,983,655	49,181,284	5,515,959	8,297,481	651,712	13,043,756	29,433,078	59.8	19,748,206	13,273,654	4,820,827	3,014,537
	7 mos.	9,781	226,531,225	51,764,210	301,563,623	36,423,617	55,193,099	4,207,423	82,172,195	190,951,848	63.3	110,611,775	78,699,555	24,791,626	19,998,640
Utah	July	111	121,775	.....	121,786	15,378	41,921	635	37,949	100,010	82.1	21,776	16,859	15,436	6,269
	7 mos.	111	787,010	.....	787,205	103,816	269,638	3,824	239,439	647,519	82.3	139,686	101,921	92,974	69,995
Virginian	July	656	2,230,155	13,740	2,332,304	281,199	697,464	26,471	519,307	1,578,909	67.7	753,395	287,300	568,811	582,597
	7 mos.	657	17,354,298	66,275	18,096,355	1,931,973	4,767,052	188,235	3,876,115	11,167,667	61.7	6,928,688	2,710,600	5,089,143	4,245,581
Wabash	July	2,393	6,262,160	842,616	7,593,012	1,211,103	1,072,937	175,821	2,473,499	5,200,441	68.5	2,392,571	1,302,511	666,714	753,250
	7 mos.	2,393	48,174,474	5,990,823	57,505,213	7,309,331	7,377,543	1,260,591	17,929,097	35,634,517	62.0	21,870,696	13,353,481	5,622,468	5,324,654
Ann Arbor	July	294	466,005	16,942	521,946	71,387	95,564	16,442	206,139	402,583	77.1	119,363	55,760	58,887	72,031
	7 mos.	294	3,435,294	73,187	3,616,870	448,682	637,764	117,507	1,457,382	2,746,667	75.9	870,203	404,558	444,059	400,029
Western Maryland	July	840	2,781,711	53,161	2,921,877	513,407	625,294	45,729	765,661	2,051,768	70.2	870,109	358,000	585,517	494,350
	7 mos.	840	20,883,153	244,160	21,688,393	3,201,361	4,398,160	327,225	5,604,511	14,222,913	65.6	7,465,480	4,028,000	3,857,001	4,118,394
Western Pacific	July	1,195	4,545,863	942,919	5,662,640	709,296	665,911	89,238	1,500,535	3,130,273	55.3	2,532,367	1,579,739	721,711	669,162
	7 mos.	1,195	29,280,327	4,856,452	35,234,015	4,613,855	4,725,043	647,468	9,684,796	21,190,703	60.1	14,043,312	8,657,638	4,076,710	3,901,077
Wheeling & Lake Erie	July	507	1,968,281		2,059,790	253,996	408,503	40,500	641,696	1,398,115	67.9	661,675	570,797	265,858	288,762
	7 mos.	507	15,513,266	22	16,032,939	1,588,471	2,824,090	297,475	4,564,749	9,642,003	60.1	6,390,936	5,546,781	2,097,426	1,903,265
Wisconsin Central	July	1,130	1,569,666	143,069	1,870,429	265,730	271,443	44,046	692,268	1,341,337	71.7	529,092	306,338	222,898	257,459
	7 mos.	1,130	10,692,658	619,076	12,330,331	1,559,715	1,843,417	294,426	4,848,484	9,014,665	73.1	3,315,666	1,451,777	1,765,780	2,062,247

Greater Strength and Better Balance



UNIVERSAL
WHEEL CENTERS

MEET the intensified demands of today's power with better engineered LFM Universal Wheel Centers. Heavier trains, higher speeds require improved wheel characteristics—greater radial, transverse, and compressive strengths.* These, plus better scientifically determined balance, are assured when you specify LFM Universal Wheel Centers.

* The stress analysis of Universal Wheel Centers compared with conventional spoke type centers shows that the Universal Wheel Centers have:

130% greater radial strength at rim
46% greater transverse strength at rim
12½% greater compressive strength of spokes

THE LOCOMOTIVE FINISHED MATERIAL CO.
ATCHISON, KANSAS • NEW YORK CITY • CHICAGO, ILL.

A POWER PLANT

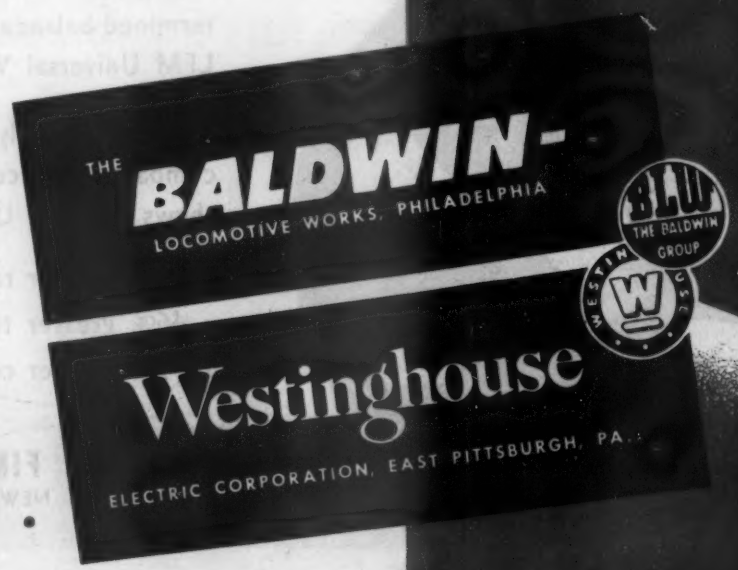
Engineered for "around-the-clock" operation

With the big job there is to do and the little equipment there is to do it, *availability* is the number one requirement in diesel-electric locomotives today.

This availability must start in the power plant . . . and so the engineering brains and skill of two great organizations, that have served the railroads for many years, were pooled to build around-the-clock performance into Baldwin-Westinghouse units.

One feature, among many, is the chrome-plating used in cylinder liners. Users have reported that liners last several times as long, and that ring life is also greatly increased.

Baldwin-Westinghouse Diesel-Electric Locomotives are helping over 60 major railroads to handle record-breaking freight. You'll find it profitable to investigate what these locomotives can do for you.



KEEP OFF

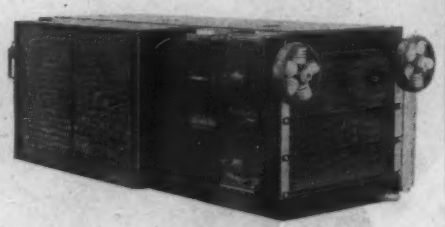
Built in 3 Types:
64 volt, DC
110 volt, DC
220 volt,
3-phase AC

To meet increased demands for electrical energy...

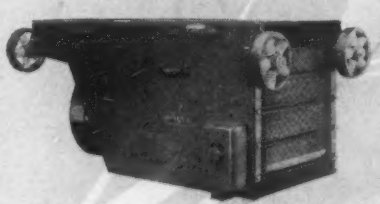
WAUKESHA

ENGINE-GENERATOR

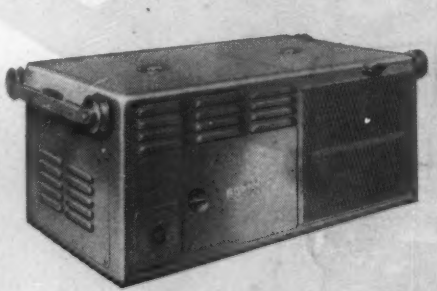
25 KW, DC—30 KVA, AC



7-Ton Waukesha Railway Type Ice Engine



7½ KW Waukesha Railway Engine-Generator



25 KW Waukesha Railway Engine-Generator

● **An important addition to the Waukesha line of engine-driven equipment—this new and larger Waukesha Engine-Generator—the result of Waukesha engineering know-how *and* 25,000,000 miles actual operation on railway cars and Pullmans over 25 major American railroad systems in the past ten years.**

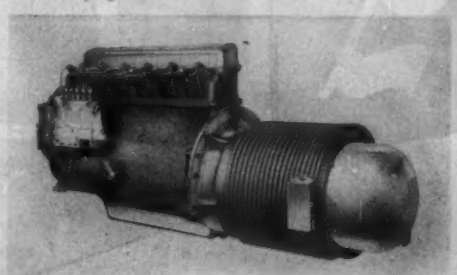
Built to meet the increased demand for electrical energy—this compact, lightweight, quiet, dependable power plant has a six-cylinder, propane gas or full Diesel engine. Cushion-mounted beneath the passenger car on the exclusive Waukesha supporting tracks, its "roll-out" feature facilitates inspection and servicing. Complete information without obligation.

Refrigeration Division

WAUKESHA MOTOR COMPANY

WAUKESHA, WISCONSIN

Largest Builders of Mobile Engine-Driven Refrigeration and Generator Equipment



Waukesha 6-Cylinder Heavy-Duty Railway Type Power Plant

"BIG JEEP" smashed load and speed marks on maiden run... Now hauls record-breaking tonnage day in, day out!

Crack streamliner races TWO MILLION MILES in TWO MILLION MINUTES!

New turbine locomotive MAKING RAILROAD HISTORY!

...and they rely on SHELL LUBRICANTS

THE evidence is piling up: In crack engines setting performance records in all sections of the country, Shell Lubricants are proving they have the quality to stand up to this high-speed, long-haul, critical type of operation.

If you have a particularly tough lubricating problem, perhaps Shell Lubricants are the answer. For further facts, get in touch with Shell Oil Company, Incorporated, 50 West 50th Street, New York 20, New York; or 100 Bush Street, San Francisco 6, California.

SHELL

SHELL RAILROAD LUBRICANTS

ANOTHER FAMOUS AMERICAN INDUSTRY

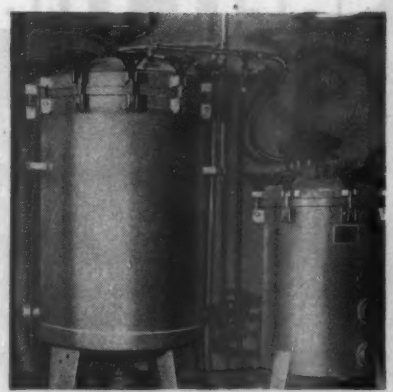
That Uses Bowser EXACT Liquid Control

ON THE JOB... for more than 26,000 Hours! That's the Performance Record of BOWSER Filtering Equipment at the Famed **ANHEUSER-BUSCH BREWERY**

The Bowser Filter in the Anheuser-Busch Brewery in St. Louis pictured here has been operating day and night ... seven days a week ... for three full years ... a total of over *26,000 hours!*

This is typical of Bowser performance not only in the brewing industry but also in every other industry of importance throughout the Nation.

Two things you can count on ... the clarity of beer that's Bowser-filtered ... and the unfailing performance of Bowser Beer Filters and Bowser Meters. For years, Bowser Beer Meters have been approved by the U. S. Bureau of Internal Revenue for the measurement of taxable beer. In addition, more Bowser Beer Filters (diatomaceous silica type) are now in use in American breweries than all other makes of powder type filters.



Railroads report equally outstanding benefits from other types of Bowser equipment. Time saving, automatic Bowser Fueling Systems are used by many American and Canadian railroads to fuel their fleets of gas and Diesel electric locomotives. A Bowser unit delivers 800 to 850 gallons or more in four to five minutes. In addition, a Bowser Recording Printer Meter provides up to eight copies of the delivery report. A Bowser engineer will gladly consult with you—no cost or obligation. Write BOWSER, INC., Dept. 38-I, Fort Wayne 2, Indiana.

BOWSER
SINCE 1885

Not only has Bowser's war production earned the Army-Navy E ... Bowser equipment has helped earn it for scores of other companies.

THE NAME THAT MEANS **EXACT CONTROL** OF LIQUIDS

TO RESIST WEAR AND BREAKAGE

WHAT STRONG TEETH THEY HAVE!

That is point number one in buying gears—teeth that resist wear, that do not break under strain.

When your gears are cast steel, you can add to wear resistance such important properties as good machinability, and *uniform* tensile strength with absence of flow lines.

Cast steel gears also may be given differential heat treatment, and are readily weldable should repairs become necessary.

It is sometimes possible to use gears with cast teeth—eliminating costly gear cutting operations.

The properties most useful for the job can be specified in advance—for gears as well as other mechanical or structural parts—all the desirable properties of steel as a material, in any combination you require.

Add to that the economy of the casting process in producing any shape you want, with resulting savings in finishing and assembly.

Through extensive research and improved techniques, steel castings offer you advantages over any other methods of adapting steel itself to your purposes.

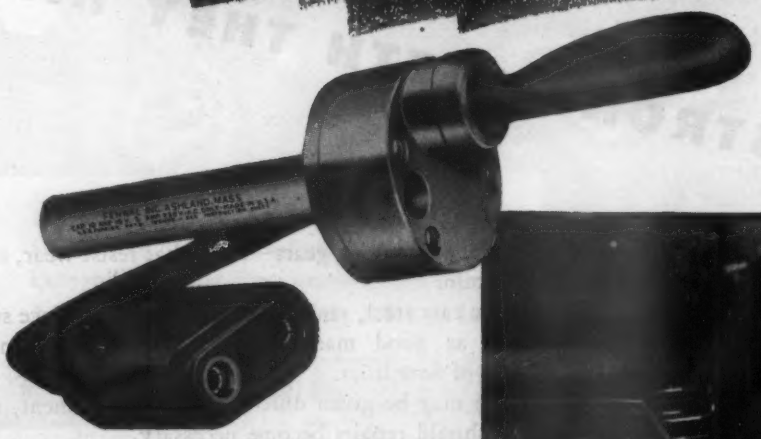
Whatever you make, or plan to make, it's good, sound business to consult your steel foundryman—especially in the planning stage. Or you may feel free to write direct to Steel Founders' Society, 920 Midland Bldg., Cleveland, Ohio.

MODERNIZE AND IMPROVE YOUR PRODUCT WITH

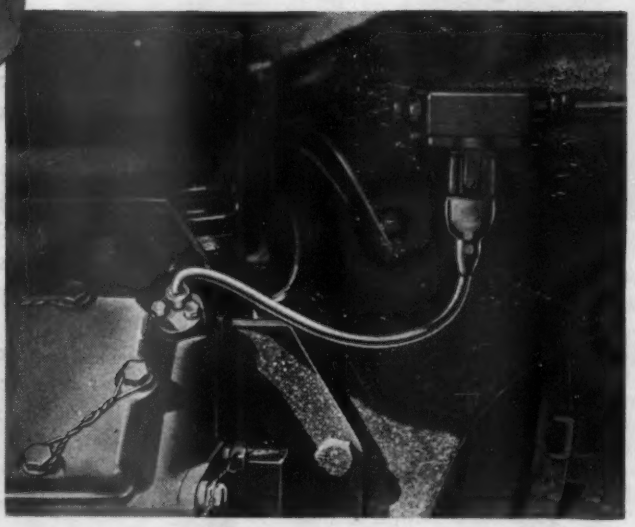
STEEL CASTINGS

NOT JUST A FEW...OR SCORES...OR HUNDREDS...BUT

Thousands of Fenwal THERMOSWITCHES



In Actual Use Today, Protecting Journal Box Bearings of Diesel Locomotives on Leading U. S. Railroads



Eliminating costly delays, breakdowns and valuable time tied up in repairs, Fenwal Journal Box THERMOSWITCH is the simplest, most efficient device ever developed to warn of mounting temperatures in journal boxes. Connected to a panel board in the engine cab, THERMOSWITCH reports by green light that "all's well" . . . by *red* light with timely warning that a hot-box threatens.

This reliable hot-box preventive alarm is now offered to American railroads for protection of passenger car journal boxes. If you will send for latest available data, you'll learn the vital facts of Fenwal protection and Fenwal field engineering service . . . without obligation.

Fenwal, Inc.

THERMOSWITCHES

FOR COMPLETE TEMPERATURE CONTROL

45 Pleasant Street, Ashland, Massachusetts

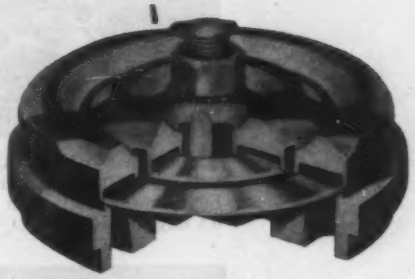
LOCKED

. . . AGAINST WASTED AIR!

EFFICIENCY DESTROYER . . . cost raiser . . . power-waster. Waste air is all these and more. Escaping through warped or broken valves, it runs up horsepower costs and cuts down the output of your air compressor.

There are no "escape routes" . . . no power-wasting detours in a Gardner-Denver "RX" compressor. Duo-Plate "cushioned" valves effectively lock in the air . . . allow none to escape through breakage or warping.

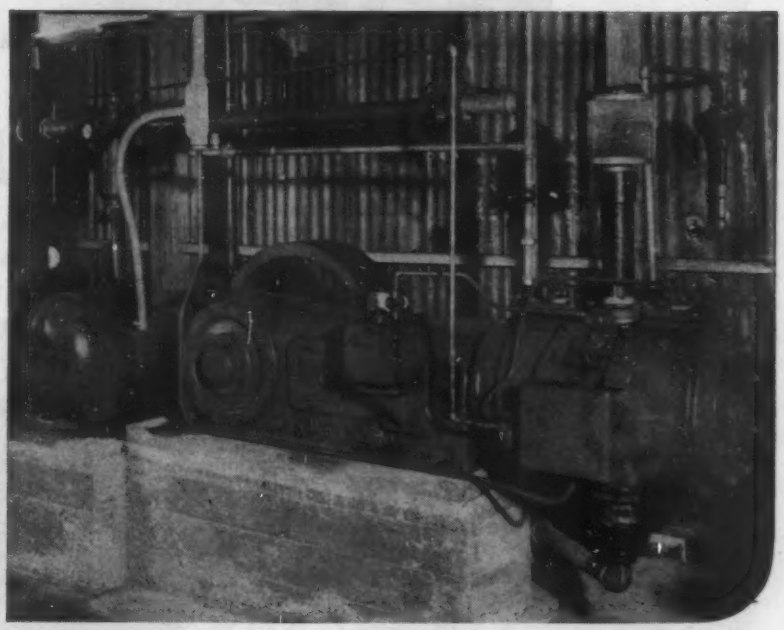
These simple, durable valves, with their combination of light weight and large flow area, minimum clearance and low air velocity, assure high delivery capacity, high compression efficiency, quiet operation, and lowest power consumption. And they're "air-cushioned" for long life.



Cushioned Valve

OTHER "RX" FEATURES

1. **Rugged main frame assures long life . . . low maintenance.**
2. **Complete, effective water-jacketing of all valves, air passages, and cylinder heads reduces discharge temperatures . . . assures lubrication economy.**
3. **Positive system means ample lubrication of all moving parts.**
4. **Correctly designed air cylinders permit high volumetric efficiency and low horsepower requirements.**
5. **Efficient "Clean-Air" after-cooler to assure driest, coolest air for minimum wear on hoses and tools available as additional equipment.**



For complete information on Gardner-Denver "RX" Single-Stage Horizontal Compressors, write Gardner-Denver Company, Quincy, Illinois

GARDNER-DENVER *Since 1859*

HYSTERS *are 'naturals' for tough hoisting - pulling jobs like this...*

1 This 2-8-0 U. S. A. locomotive slid down the side of a 60-foot fill that gave way after unusually heavy rains. It lay on its side at the bottom of a 45 degree slope.

2 A nearby British school of mechanical engineers loaned two "Caterpillar" tractors equipped with HYSTER Towing Winches. A skid mat of rails anchored to ties was built.

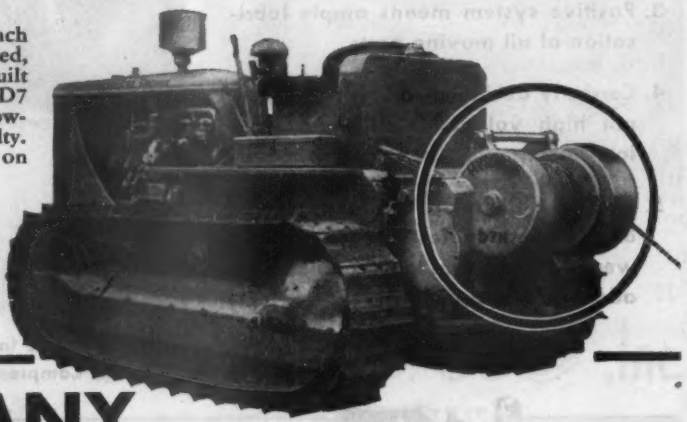
3 Two slings leading from the HYSTER Winches, and double-blocked to hand winches as a safety precaution, were then placed around the locomotive and raising got underway.

4 The locomotive was finally raised to level ground, rotated parallel to right-of-way, and rolled over on its wheels. Job was completed during bitter cold and stormy weather.

HYSTER
FOR ANY LIFT OR PULL

5 This HYSTER D7N Towing Winch was the model used on the job. Rugged, direct-geared and reversible, it's built strong to utilize the "Caterpillar" D7 tractor's immense power. Tough towing and hoisting jobs are its specialty. Write for complete specifications on HYSTER Winches.

Sold and serviced by "Caterpillar" dealers everywhere

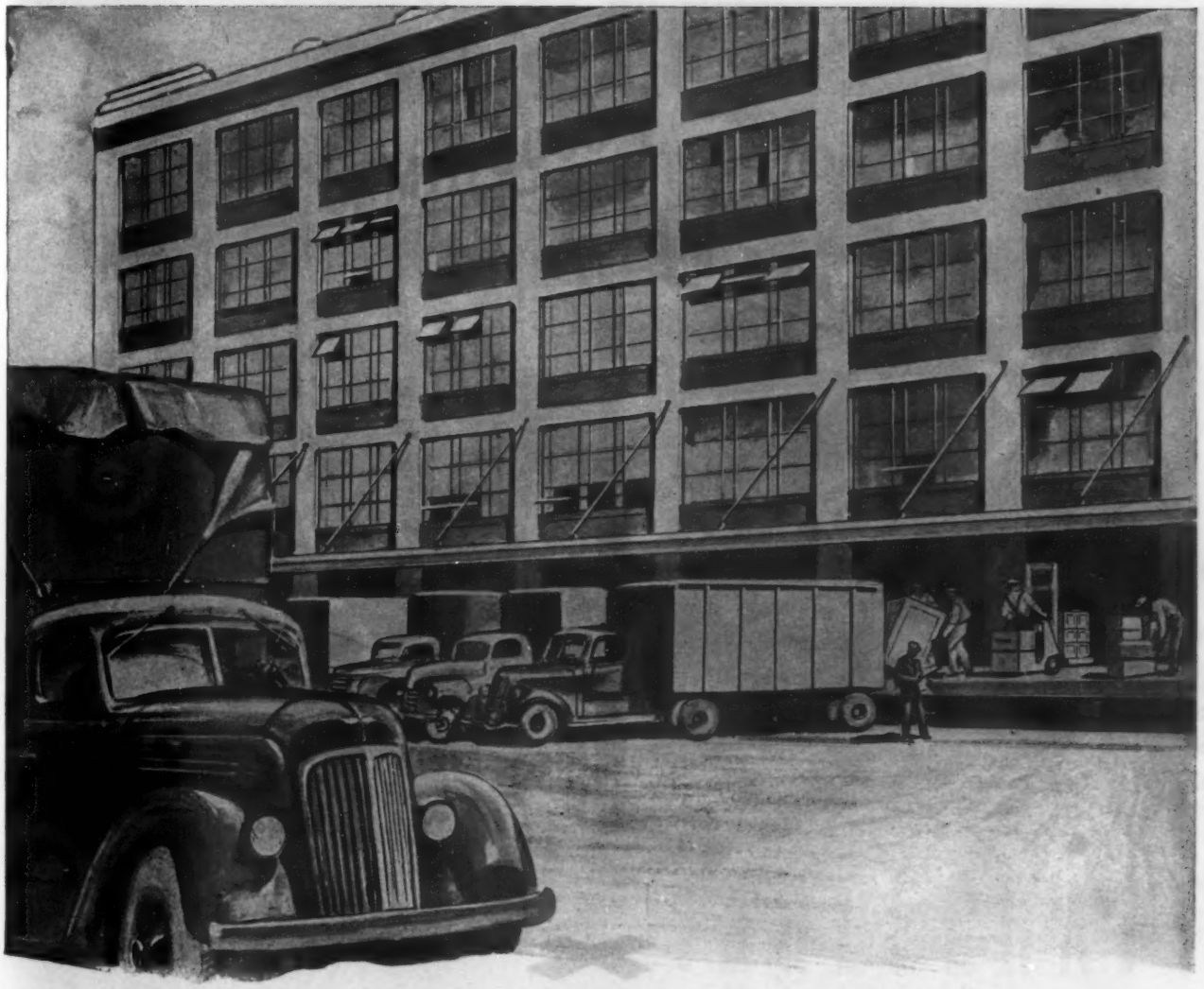


HYSTER COMPANY

2932 N. E. Clackamas Street
PORTLAND 8, OREGON

1832 North Adams Street
PEORIA 1, ILLINOIS

WORLD'S LARGEST MANUFACTURERS OF TRACTOR HOISTS AND WINCHES



Why FREIGHT ELEVATORS are important!

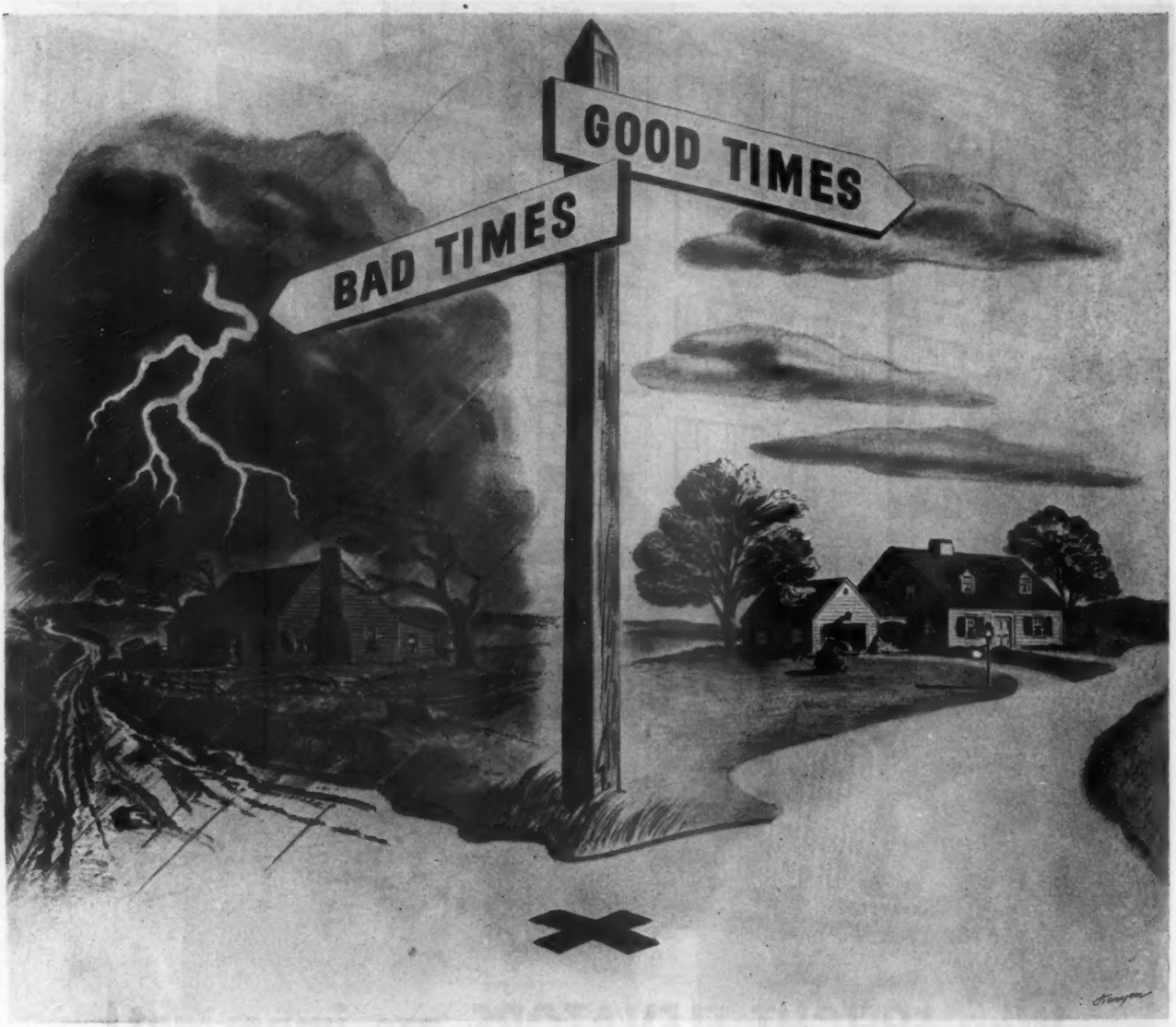
BEHIND this busy scene, freight elevators are constantly on the job . . . keeping supplies and even the trucks themselves moving on schedule . . . without bottlenecks . . . without confusion.

For intensive service, the elevators should be high speed, automatic in operation and provided with power operated doors. Such equipment will compensate for some of the time lost in loading and unloading operations.

If conditions require, freight elevators can be dispatched to predetermined floors to suit any cycle of operation. Also, they do not necessarily require regular attendants.

Your nearest Otis representative is now available to assist you and your Architect in making preliminary elevator plans and studies. For the finest in vertical transportation tomorrow, call your Otis representative TODAY!

Otis ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES



Here's where you stand today!

Look ahead a year or two...for your own sake.

Over on the dark side is this: Every unnecessary thing you buy helps shove the country one step nearer inflation and the bad times that come in inflation's wake.

Over on the bright side is this: Every single cent you save helps move you and your country one step nearer the kind of prosperous, happy, post-war America you want.

Okay—you're human. You're thinking mainly about yourself.

YOU SHOULD. Because if every man Jack (and every girl Jill) buys nothing he can get along without . . . (avoids Black Markets and "just-a-little-above-the-ceiling" like the plague!) . . . pays off the mortgage or any other debts . . . takes out more insurance . . . builds a healthy sock of savings . . . buys and holds more War Bonds—inflation will stay away from our door.

And Jack and Jill will be in a sound position no matter what times come.

Maybe you ought to clip this signpost and paste it in your pocketbook as a reminder that you can BUY your way to bad *times. Or you can SAVE your way to* good *ones.*

That's where YOU stand today.

4 THINGS TO DO to keep prices down and to protect your own future!

1. Buy only what you really need.

2. When you buy, pay no more than ceiling prices. Pay your ration points in full.

3. Keep your *own* prices down. Don't take advantage of war conditions to ask more for your labor, your services, or the goods you sell.

4. *Save.* Buy and hold all the War Bonds you can afford—to help pay for the war and protect your future. Keep up your insurance

HELP US KEEP PRICES DOWN

A United States War message prepared by the War Advertising Council; approved by the Office of War Information; and contributed by this magazine in cooperation with the Magazine Publishers of America.

"Specialty of the House"

on the Flaming Sword $3.50

Choice of:
Fresh Shrimp Cocktail
Filets of Herring in Sour Cream
Chopped Chicken Livers
Antipasto
Supreme of Fresh Fruit
or Soup on Wagon
Sweetbreads and Mushrooms
Half of Milkfed Chicken, Rossini
Chicken Livers, Tallyrand
Mignon of Pork Timbertoin
Broad Breast Mammoth Roast Tom Turkey, Dressing, Cranberry Sauce, Candied Sweet Potato
(not on Sword)
Tomato on Brochette
Potatoes du Jour
Salad on Wagon
Coffee
Choice of Dessert on Wagon or Ice Cream
No Substitutions

"SPECIALTY OF THE HOUSE"... IN NAPERY
"Close-up" of attractively laid table (above) shows that the Ambassador East Hotel, like so many other hotels, restaurants, clubs, railroads and other types of dining services, has chosen for its table-settings:

*TABLECRAFT
(ROSEMARY-BASCO)
Cloths, Napkins and Damasks, made *right* in America
ROSEMARY SALES
A DIVISION OF SIMMONS CO.
40 Worth Street, New York 13, N. Y.
*Reg. U. S. Pat. Off.

At Chicago's **AMBASSADOR EAST HOTEL** it's the "*Flaming Sword*" on which meat and poultry are presented at the table. Masterfully manipulated by skilled stewards this glamorous and unique service attracts distinguished patronage to the luxuriously appointed Pump Room which has developed an international reputation for superb cuisine.

SUPERIOR
3-WAY
FLUE ROLLER

One tool — One operation and the job is done quickly and more efficiently with savings up to 80% in time and labor. A better and more uniform joint results in less down-time and longer service on the road.

Also Manufacturers of

Superior Automatic Soot Blowers
Superior Pneumatic Bell Ringers
Rees General Purpose Jacks
Heavy Duty Diesel Bearings

One Tool
One Operation
FLARES
EXPANDS
PROSSERS

Saves Time and Labor Up to 80%

Let Us Send You Full Information

SUPERIOR RAILWAY PRODUCTS CORP.
7501 Thomas Boulevard, Pittsburgh, Penna.

FOR SALE GOVERNMENT-OWNED
INDUSTRIAL RAILROAD TRACK IN CALCASIEU PARISH, LOUISIANA

Reconstruction Finance Corporation, a disposal agency designated by the Surplus Property Board, has negotiations under way for the sale of a line of railroad (including a 100-foot right-of-way, together with certain interchange, spur and side tracks relating to said line of railroad but excluding the so-called Maplewood spur), approximately five miles in length and extending in a Southwesterly direction from a connection with track owned by Kansas City Southern Railway Company, at a point adjacent to the United States Highway No. 90 near West Lake, Louisiana.

As conditions precedent to sale of this property the purchaser must agree, among other things, to furnish common carrier service at rates so far as legally practicable in general the same as those contemporaneously maintained to or from Lake Charles, Louisiana, by common carriers serving the latter point, must state the charges it will agree to maintain between industries on said track and between said industries and all points in Lake Charles, Louisiana, must agree to secure, if required by law, the approval of any administrative and/or judicial body, whether State or Federal or both, and must furnish complete information as to the proposed method of operation.

Persons interested in obtaining full information concerning this line of railroad and in negotiating for its purchase, under the conditions outlined above, should communicate promptly with

RECONSTRUCTION FINANCE CORPORATION
RAILROAD DIVISION
WASHINGTON 25, D. C.

Railroad Men Know...

What a Big Part *a small part can play!*

XLO
EX-CELL-O for PRECISION

To right: Some Ex-Cell-O Hardened and Ground Steel Railroad Bushings and Pins.

The use of Ex-Cell-O Pins and Bushings does not interrupt train schedules through failures in service. They wear slowly, and the little wear that does occur (after hundreds of thousands of miles of service) is evenly distributed over all surfaces of the pins and bushings. The net result is lower maintenance costs . . . Ex-Cell-O Pins and Bushings can be depended upon to last for several shoppings without replacement.

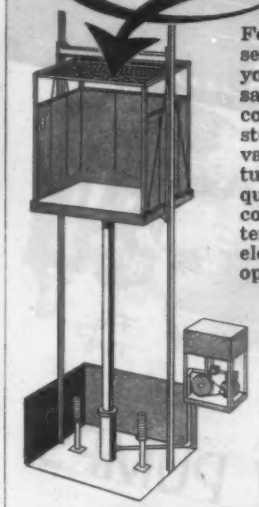
Railroad Division

EX-CELL-O CORPORATION

Detroit 6, Michigan

45—69

MOST ECONOMICAL ELEVATOR FOR 2, 3 OR 4 STORIES



For 2, 3 or 4 story freight or passenger service, an Oildraulic Elevator offers you very definite savings: First, you save on construction or remodeling costs. Being pushed up from below instead of pulled up from above, no elevator penthouse, heavy sidewall structure or special machine room is required. Second, you save on low initial cost of the equipment and low maintenance expense. You can count on an electric Oildraulic Elevator for smooth operation, accuracy of landing stops, dependability, and safety. It is backed by Rotary Lift Company's experience in building over 40,000 hydraulic elevating units in the past twenty years.

Mail the coupon below for free copy of Catalog RE-301. Contains complete information and preliminary layout data—a real aid in formulating plans.

Rotary

OILDRAULIC ELEVATORS

Rotary Also Makes Oildraulic Levelators

ROTARY LIFT COMPANY
1017 KANSAS STREET
MEMPHIS, TENN.

Please send Catalog RE-301 on Oildraulic Elevators to:

NAME.....

ADDRESS.....

CITY.....STATE.....

MAIL THIS COUPON FOR FULL DETAILS

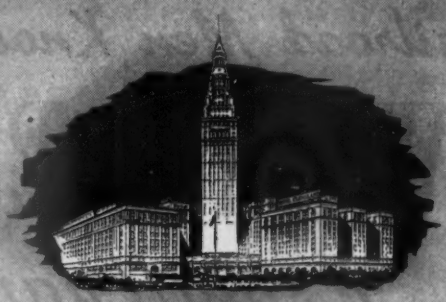
Rx PRESCRIPTION for acid bite

The corrosive bite of acids is a direct threat to cable life. Acids in road ballast cinders attack buried cable, while other acids endanger roundhouse and repair shop cable service.

The choice of Okolite-Okoprene* is an effective prescription for acid bite. Cables of this durable construction are resistant not only to acids, but to alkalies, other chemicals and oil as well. Okolite gives them a moisture-resistant insulation of excellent electrical properties, Okoprene a non-flammable neoprene protective jacket. The Okonite Company, Passaic, N. J.

* U. S. Pat. No. 2,312,058

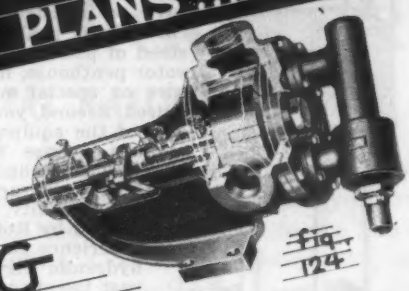
OKONITE
insulated wires and cables 4111



Convenient, comfortable, hospitable —that's Cleveland's favorite hotel

Hotel Cleveland
CLEVELAND, OHIO
Directly connected with Union Passenger Terminal

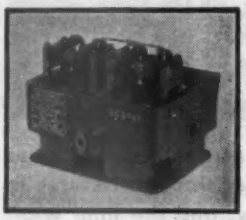
for YOUR FUTURE PUMP PLANS....



Ask VIKING FOR BULLETINS 2500 & 3000 ON HEAVY DUTY PUMPS For Handling LIGHT or HEAVY LIQUIDS UP TO 200 LBS. P.S.I. IN CAPACITIES OF 10·18·35·50·90·200·300 G.P.M.

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

"MOONEY" QUAD-VALVE CYLINDER HEADS



FOR RAIL CAR ENGINES

Designed to fit—

Models 120, 146 and 148 Winton Engines

Models 660 and 860 Brill Engines

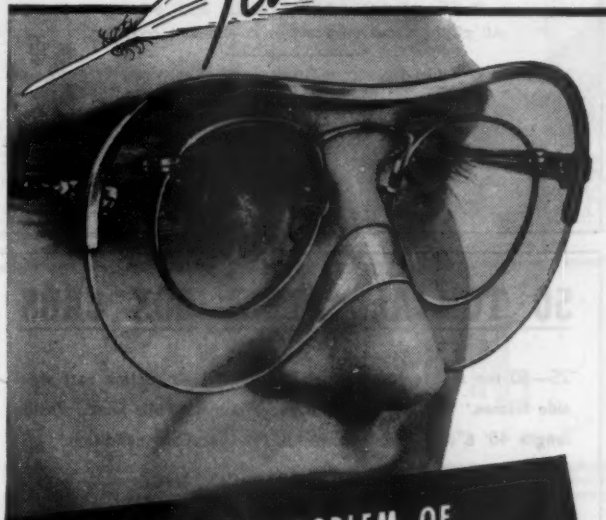
"MOONEY" QUAD-VALVE CYLINDER HEADS—
complete with Valve-Motion — insure

- Increased Power
- Better Fuel Economy
- More Mileage per Overhaul
- Decreased Maintenance Cost
- Better Thermal Efficiency
- Forced Water Circulation directly against and around valve seats

Manufactured by

AUTO ENGINE WORKS (INC.)
349 North Hamline Ave. Saint Paul, Minnesota

THE NEW WILLSON FeatherSpec



TO SOLVE THE PROBLEM OF KEEPING SAFETY SPECTACLES ON WORKERS IN SEMI-HAZARDOUS JOBS

• FEATHERSPEC makes real safety news; weighs less than an ounce; much lighter than other types. Large one-piece plastic lens; can be replaced in ten seconds; held firmly in "suspension-lock" frame; in clear or Willson *Tru-Hue*★ green. FeatherSpec means real economy; costs less; can be worn over regular glasses; saves cost of special prescription spectacles. FeatherSpec provides new convenience; new comfort; so workers will wear it all day long; for light grinding, spot welding, woodworking and so forth.

See your Willson Distributor or write to RA-7

*Pat. Applied For ★T.M. Reg. U. S. Pat. Off.

GOGGLES • RESPIRATORS • GAS MASKS • HELMETS

DOUBLE WILLSON PRODUCTS INCORPORATED

READING, PA., U. S. A. Established 1870

ARMY AIR FORCES AWARD BRIGGS & STRATTON "Approved" QUALITY CONTROL RATING

For over two years Briggs & Stratton has produced the General Electric high-tension magnetos used on the 18-cyl. Pratt & Whitney 2000 h. p. engines powering high-flying fighters, bombers and transport planes.

In recognition of the high standards of inspection procedures and control in the manufacture of these magnetos, the U. S. Army Air Forces have accorded to Briggs & Stratton the "APPROVED" Quality Control Rating.

Air-Cooled Power

4 CYCLE BRIGGS & STRATTON GASOLINE ENGINES

The ultra-precision construction, close tolerances, and rigid inspections necessary in making these high-tension magnetos is far more exacting than generally used. Yet no special preparations were needed at Briggs & Stratton, — *because for many years, this same watch-like precision has been the outstanding factor in the long life and superior performance of Briggs & Stratton engines!* Briggs & Stratton Corporation, Milwaukee 1, Wisconsin, U.S.A.

GET TOGETHER DEPARTMENT

Educational Services
for
RAILROAD MEN

Our New Service
on
Diesel Locomotive
Operation
is highly recommended
for
Engineers and Firemen

The Railway Educational Bureau
Omaha 2, Nebraska

GET OUR PRICES FIRST

RAILWAY EQUIPMENT
***and* ACCESSORIES**

We can furnish rails, spikes, bolts, angle bars, cranes and other railway material. Machines, motors, pumps, etc.
Write, wire or phone inquiries

Sonken - Galamba Corp.
Kansas City 18, Kans.

RELAYING RAILS

12#—exceptionally good quality — RAILROAD TIE PLATES for all size rails. All in good condition. For complete details, contact
SONKEN-GALAMBA CORP.
Kansas City 18, Kans.

RAILROAD EQUIPMENT

78 ton Baldwin Type 0-6-0 Switcher — Side Tank
80 ton Baldwin Type 0-6-0 Switcher — Separate Tender
110 ton American Type 0-8-0 Switchers — Separate Tenders
181 ton American Type 2-8-2 Mikados with Boosters

All of the above Locomotives in excellent condition.

Model 250 Brill Gas Electric all steel combination passenger, baggage and mail car new in 1928. Now being completely rebuilt.

Full detailed particulars with quotation on any of the above items will be gladly furnished.

THOMAS F. CAREY CO., Inc.
120 LIBERTY STREET
New York 6, New York

---

50 TON ALL STEEL BOX CARS

25—50 ton all steel box cars. New 1929. U section cast steel side frames. Duryea cushioned underframes. Fully lined. Inside length 40' 6". Capacity 3548 cu. ft. Excellent condition.

THOMAS F. CAREY CO., INC.
120 Liberty Street
New York 6, N. Y.
Telephone Barclay 7-1770

POSITION OPEN

Well Known Firm of Consulting Engineers Has Opening for Engineer 30 to 40 Years Old With Well Rounded Transportation Experience Including Economic, Operating and Valuation Studies.

Wide Railroad Acquaintance Helpful

Reply BOX 756, RAILWAY AGE, 30 CHURCH ST., N. Y. 7, N. Y.

Freight Car Prices REDUCED!

Now Only Half of Recent Peak Prices—
As Low As $500

7, Hopper, Twin, 50-Ton
80, Hopper, Side Discharge, 50-Ton
10, Refrigerator, 40-Ft., 40-Ton
10, Box, 40-Ft., 40-Ton
7, Box, Automobile, Steel, 50-Ft., 50-Ton
6, Dump, Magor, 30-Yd., 50-Ton; Lift Door
1, Dump, Clark, Automatic, 30-Yd., 50 Ton; Drop Door
4, Dump, K & J Automatic, Lift Door; 37-Yd., 50-Ton
20, Dump, Koppel, Automatic, 30-Yd., 40-Ton; Lift Doors
10, Dump, K & J Automatic Lift Door; 20-Yd., 50-Ton
2, Dump, K & J, Lift Door, 37-Yd., 50-Ton
25, Tank, 8000-Gallon, 40-Ton Trucks
50, Tank, 10,000-Gallon, 50-Ton Trucks
15, Gondolas, 38-Ft., 50-Ton, All Steel, 4-Ft., 4-In. High Inside

All cars are priced to sell!

IRON & STEEL PRODUCTS, INC.
40 years' experience
13486 S. Brainard Ave. Chicago 33, Illinois
"ANYTHING containing IRON or STEEL"

Wanted
WORKS MANAGER
or
GENERAL SUPERINTENDENT

For Freight car manufacturing plant located in Southern Illinois. Excellent opportunity for experienced man. Write, giving complete details, to Box 753, RAILWAY AGE, 30 Church St., New York 7, N. Y.

1—2 Unit, 87-Ton Westinghouse Diesel Electric Locomotive. Equipped with two 300 H.P. Westinghouse engines. Can be operated as 1 or 2 units.

IRON & STEEL PRODUCTS, Inc.
40 years' experience
13486 S. Brainard Ave.,
Chicago 33, Ill.
"ANYTHING containing IRON or STEEL"

Robert W. Hunt Company
ENGINEERS
Inspection—Tests—Consultation
All Railway Equipment
Structures and Materials
General Office:
175 W. Jackson Boulevard
CHICAGO
New York-Pittsburgh-St. Louis

POSITION WANTED

Group of the best experienced track men with camp equipment looking for steady job. Will go anywhere. Address Box 754, RAILWAY AGE, 30 Church Street, New York 7, N. Y.

POSITIONS OPEN

Wanted: 1 combination checker and freight car draftsman; 2 experienced freight car draftsmen for freight car manufacturing plant located in Middle West. Excellent opportunity. Write giving details to BOX 758, RAILWAY AGE, 30 CHURCH STREET, NEW YORK 7, N. Y.

WANTED

1—all steel private or business car. Must be modern and in A1 condition.

Thomas F. Carey Co., Inc.
120 Liberty Street
New York 6, N. Y.
Barclay 7-1770

Use
Space
Here

DULIEN BUYS **DULIEN** SELLS **DULIEN** LIQUIDATES
RAILROAD EQUIPMENT & ACCESSORIES

Available for IMMEDIATE DELIVERY

3 American Saddle Tank Locomotives
1—94 Ton SUPERHEATED 1—84 Ton
1—83 Ton

Subject to Prior Sale

DULIEN STEEL PRODUCTS, Inc.
OF WASHINGTON
1008 Western Ave.
SEATTLE 4, WASH.
OF NEW YORK
2280 Woolworth Bldg.
NEW YORK 7, N. Y.

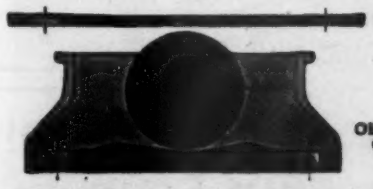
RAILROAD EQUIPMENT
CARS—LOCOMOTIVES
REPAIR PARTS

RELAYING RAILS

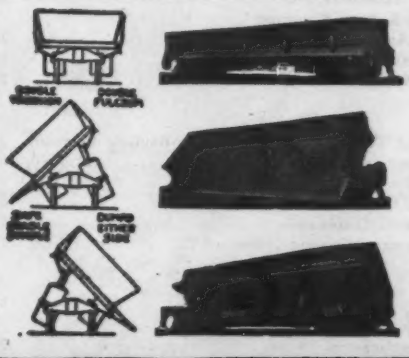
STEEL STORAGE TANKS
6000 — 8000 — 10000 gal. cap.
CLEANED AND TESTED

THE PURDY COMPANY
122 S. Michigan Avenue Chicago 3, Illinois

GOLD
VAPOR-STEAM-ELECTRIC
CAR HEATING
SPECIALTIES
GOLD CAR HEATING & LIGHTING CO.
NEW YORK



STUCKI
SIDE
BEARINGS
Manufactured by
A. Stucki Co.
Oliver Bldg., Pittsburgh, Pa.
Canadian Representatives
The Holden Co., Ltd.
Montreal, Can.



AIR DUMP
CARS

RAIL CARS
MINE CARS
AND
LOCOMOTIVES
AXLESS TRAINS
COMPLETE
HAULAGE SYSTEMS

DIFFERENTIAL STEEL CAR CO.
FINDLAY, OHIO

This Stands for Honorable Service to Our Country

Respect its wearer, whoever he or she may be, for it represents an honorable discharge from the armed forces of the United States . . . *for a job well done.*

Index to Advertisers

September 15, 1945

A

American Arch Company, Inc. ... 55
American Creosoting Company ... 32
American Institute of Bolt, Nut and Rivet Manufacturers 14, 15
American Locomotive Company ... 6, 7
American Steel Foundries ... 23
American Steel & Wire Company ... 4, 5
Association of American Railroads ... 16
Automatic Electric Sales Corporation ... 48
Auto Engine Works (Inc.) ... 74

B

Baker Industrial Truck Div. of The Baker-Raulang Company 25
Baldwin Locomotive Works, The ... 60, 61
Bethlehem Steel ... 3
Bowser, Inc. ... 64
Briggs & Stratton Corporation ... 75
Budd Manufacturing Company, Edward G. ... 18, 19

C

Carey Co., Inc., Thomas F. ... 76
Carnegie-Illinois Steel Corporation ... 4, 5
Classified Advertisements ... 76
Climax Molybdenum Company ... 12
Columbia Steel Company ... 4, 5
Consolidated Steel Corporation ... 27
Cummins Engine Co., Inc. ... 29

D

Differential Steel Car Company ... 77
Dulien Steel Products ... 77

E

Edwards Company, Inc., O. M. ... 31
Electric Storage Battery Company, The ... 20
Electro-Metallurgical Company ... 35
Electro-Motive Division, General Motors Corporation ... 52
Ex-Cell-O Corporation ... 73

F

Fairbanks, Morse & Co. ... 37
Fenwal, Inc. ... 66
Franklin Railway Supply Company, Inc. ... 54

G

Gardner-Denver ... 67
General Electric Company ... 6, 7
General Electric Company, Electronics Department ... 33
General Railway Signal Company ... Back Cover
Get Together Department ... 76
Glidden Company, The ... 45
Gold Car Heating & Lighting Co. ... 77
Gould Storage Battery Corporation ... 38
Graybar Electric Company ... 22

H

Hotel Cleveland ... 74
Houde Engineering Division of Houdaille-Hershey Corporation 24
Hunt Company, Robert W. ... 76
Hunt-Spiller Mfg. Corporation ... 58
Hyster Company ... 68

I

Iron and Steel Products, Inc. ... 76

L

Lima Locomotive Works, Incorporated ... 53
Locomotive Finished Material Co., The ... 59

M

Magor Car Company ... 13
Massachusetts Mohair Plush Co. ... 21
McInerney Spring and Wire Company ... 17
Merritt-Chapman & Scott Corporation ... 41
Morton Manufacturing Co. ... 26

N

National Malleable and Steel Castings Co. ... 30
National Tube Company ... 4, 5
Nelson Specialty Welding Equipment Corp. ... 39

O

Ohio Locomotive Crane Co., The ... 76
Okonite Company, The ... 74
Otis Elevator Company ... 69

P

Porter Company, Inc., H. K. ... 2
Purdy Company, The ... 77
Pullman-Standard Car Manufacturing Company ... 10, 11

R

Railway Educational Bureau, The ... 76
Reconstruction Finance Corporation ... 72
Republic Steel Corporation ... 43
Rosemary Sales, A Division of Simmons Co. ... 71
Rotary Lift Company ... 73

S

Schaefer Equipment Company ... 46
Shell Oil Company, Incorporated ... 63
Simmons-Boardman Publishing Corp. ... 77
Simmons Co. ... 71
Sonken-Galamba Corp. ... 76
Standard Car Truck Corporation ... 44
Standard Register Company, The ... 40
Standard Steel Spring Company ... 42
Steel Founders' Society ... 65
Streeter-Amet Company ... 28
Stucki Co., A. ... 77
Superior Railway Products ... 72
Superheater Company, The ... 56
Sylvania Electric Company ... 47
Symington-Gould Corporation, The ... 79

T

Tennessee Coal, Iron & Railroad Company ... 4, 5
Times Telephoto Equipment, Inc., A Subsidiary of the New York Times ... 36

U

Union Carbide and Carbon Corporation ... 35
Union Switch & Signal Company ... 50
United States Rubber Company ... 34
United States Steel Export Company ... 4, 5
United States Steel Supply Company ... 4, 5

V

Viking Pump Company ... 74

W

Waukesha Motor Company ... 62
Westinghouse Air Brake Company ... 57
Westinghouse Electric Corporation ... 60, 61
Willson Products Incorporated ... 75
Wine Railway Appliance Co., The ... Front Cover

Specify FOR NEW EQUIPMENT AND MAINTENANCE

Symington COMPOSITE ARTICULATED JOURNAL BOX LIDS

The NEW, IMPROVED LID . . .

- ★ Light weight—yet sturdy
- ★ Full Articulation
- ★ Tight Joint
- ★ Center Pressure
- ★ Simple, Easy to Apply and Remove

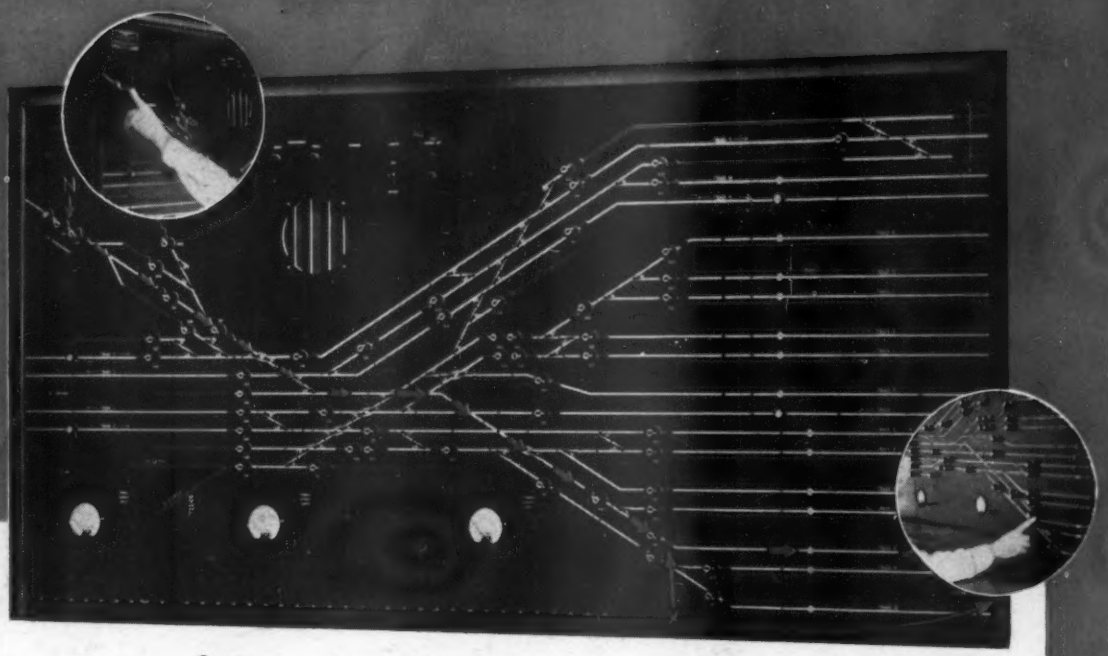
For full details send for Bulletin describing the B-265 Lid.

THE SYMINGTON-GOULD CORPORATION

Works: ROCHESTER & DEPEW, NEW YORK

New York • Chicago • St. Louis • Baltimore • Boston • San Francisco • In Canada: ADANAC SUPPLIES, LTD., Montreal, Que.

POST-WAR PLANNING?



Consider
NX ELECTRIC INTERLOCKING

Many roads are planning faster, more efficient postwar service. Everywhere along the line, faster, more efficient handling of traffic will be a *must.*

In busy terminal areas, this will be easy — with G-R-S NX ELECTRIC INTERLOCKING.

NX speeds up operations.

NX simplifies the directing of trains.

NX minimizes the possibility of error in routing trains.

NX provides the same maximum safety of operation required of standard interlocking.

With NX, the operator has before him a control panel on which is engraved a replica of the interlocking plant track layout. The entrance of a train is visually and audibly announced and, the operator knowing its destination, has merely to push an eNtrance knob where the train is entering and an eXit button where it is to depart. NX does the rest, automatically positioning switches and clearing signals as required. Too, if a normal route is not available, NX will automatically select and set up an optional route.

NX is equally adaptable to large or small layouts.

If you have interlocking plants that are going to be bottlenecks in your postwar program, or that are worn and need replacement, plan now to install NX. Its advantages will more than warrant your choice. Our nearest District Office will appreciate the opportunity of planning with you in the development of your postwar plans.

This is number 4 of a series of suggestions offered to railroad officials concerned with postwar planning. Copies of the other suggestions of this series will be sent to you upon request.

GENERAL RAILWAY SIGNAL COMPANY

New York San Francisco ROCHESTER, N. Y. Chicago St. Louis A-2028